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ABSTRACT

The manpower problem in North Carolina Appalachia, an inadequate supply of skilled labor, is essentially a problem in public school education resulting from deficiencies in basic education and work preparation for non-college-bound youth. For the schools to respond effectively, 4 basic things must happen in public education: (1) Public education must be reoriented to the world of work and occupational preparation with emphasis on traditional general and vocational education. (2) Teacher education must be improved and more teachers provided in the schools. (3) Guidance education must be improved and more counselors provided in the schools. (4) Non-curriculum concerns such as food, clothing, medical and dental care, and psychological and social services must be increased and extended into new areas. It is recommended that a local advisory committee on education undertake continuing examination of the system of public education in each local development district and insure orientation of public education to the world of work. (DK)

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MANPOWER EDUCATION IN THE NORTH CAROLINA APPALACHIAN REGION

Prepared For

State Planning Task Force
Department of Administration
Raleigh, North Carolina

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June 1968

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FOREWORD

This report is the product of many persons in North Carolina, particularly those of the Appalachian Region. Without their continuing involvement and guidance, it could not have been written. The report reflects their willingness to look critically at the institutions they support, and having done that, to enthusiastically seek better answers to old problems.

State government interest and involvement also has been invaluable. We particularly acknowledge the contribution of members of the State Planning Task Force staff who helped to shape the effort in its early days and who contributed immeasurably to the final product. We also want to acknowledge contributions of the State Department of Public Instruction, the Department of Community Colleges, the Board of Higher Education, the Employment Security Commission, the Sub-Task Force on Manpower Education, the field coordinators in each of the local development districts, and the staff of the Advisory Committee on Education to the Appalachian Regional Commission.

The desire of the people of North Carolina Appalachia to improve public education has been demonstrated at many public meetings, by the formation of local groups to examine problems of education, and by widespread acceptance of new ideas and programs in the public schools. In most local development districts, the organizational base for working on common problems in education has been established.

Much remains to be done, but the commitment of the people of North Carolina Appalachia to improving their system of public education seems to assure that things will be done.

Hammer, Greene, Siler Associates
Washington, D.C.

SUMMARY AND CONCLUSIONS

The development problem of North Carolina Appalachia is not where the jobs are coming from but rather where the people are coming from to fill the jobs. Recent data indicate that economic growth in the region may be accelerating; and shortages of skilled labor -- persons with the educational background for either advanced occupational entry or job upgrading -- are beginning to affect key industries.

Our estimates show a decided unbalance emerging by 1970 between worker needs in terms of educational requirements and the potential supply of workers. Possibly 8,000 high school dropouts will need additional work preparation during the next few years if they are to qualify for expected job opportunities. In addition, there is a potentially serious shortage of persons with post-secondary technical and two-year college education.

The manpower problem in North Carolina Appalachia, an inadequate supply of skilled labor, is essentially a problem in public school education, resulting from deficiencies in basic education and work preparation for non-college bound youth. There are two dimensions to the manpower problem:

1. The current backlog of unemployables -- resulting from inadequate work preparation in the past, and

2. The youth now in school who are receiving inadequate preparation for work.

Most of the current emphasis on manpower problems deals exclusively with the current backlog. Not enough emphasis has been on difficulties with the system of public education that affect the youth's academic performance. We feel that the proper concern of this study should be the future work preparation of youth since regional growth has cut deeply into the backlog, and programs already exist to attack the problem of adult unemployables.

The idea that "everyone who can should go to college" is basic to the difficulties within public school education. Only one in five ninth grade students will enter a four year college, and perhaps one in ten will graduate. The present system of public education is not geared to provide a total curriculum which fits the needs, background, capabilities, and most importantly -- interests, of a majority of school children.

Nevertheless, it is only through improvements in the system of public education that serious manpower problems can be eliminated. This cannot be done outside of the existing educational institutions for they alone have the resources and the capabilities to deal effectively with each and every child. What is lacking is the direction, and this depends partly upon recognition of deficiencies from within, and partly upon community recognition of problems and involvement in the educational process.

For the schools to respond effectively to the needs of most children, four basic things must happen in public education:

1. Public education must be reoriented to the world of work and occupational preparation, which enhances traditional general and vocational education, must be accepted as a main theme.

2. Teacher-education must be improved and more teachers provided in the schools.

3. Guidance education must be improved and more counselors provided in the schools.

4. Non-curriculum services such as food, clothing, medical and dental care, psychological and social worker, must be increased and extended into new areas.

A primary impediment to program·improvement and expansion in the public schools and in the community college institutions is money. Greater commitment to occupational preparation at the local level is difficult because of the cost of putting up, equipping, and adequately staffing the physical plants at each level of education. The issue of additional money for program improvement and expansion in the public schools cannot be separated from the needs of the community college institutions. Each draws upon the local tax base and expansion at one level is bound to limit expansion at the other level. Although more money indeed is needed, the real question is how to spend the education dollar most effectively. If expansion results in program and facility overlap, it represents scarce funds not well spent.

North Carolina has a fine institutional base for manpower education programs to build up a skilled labor force. With the exception of adequate local financial resources for comprehensive program improvement and expansion, this institutional base extends into the Appalachian counties. Our concern, therefore, should be with the next steps -- how can we best build upon this base in order to turn out a greater number of skilled workers?

Most important during the next few years is an attack upon the problem of public school dropouts. Programs offering remedial-type education and improved occupational preparation are desperately needed. They should be carried out within the existing institutional structure and administered by the public schools. It is likely that comprehensive programs based upon utilization of existing resources as far as is possible can be widely offered at relatively little cost. For the programs to be successful, however, business and industry, the high schools, and the post-secondary institutions must become more committed to joint participation than they have been in the past.

Project 16 is recommended as a framework for providing continuing education and work opportunity for dropouts between the ages of 16 and 18 at the time they leave school. These are youth for whom public education now offers very little, yet they are critical manpower resources for the regional economy. Project 16 is a grouping of several different remedial-type programs, each with specific objectives in occupational preparation. Project 16 objectives are essentially short-term and the hope is to have decided impact on the skilled labor supply in a few years. Yet there is a decided long-run implication -- what may be learned here in dealing with those who cannot now make it within the existing system can be the basis for continued improvement in public education.

Improving the image of local industry and establishing the value of vocational and technical education is a necessary part of turning out a greater number of skilled workers because it bridges the motivation gap. The value of occupational preparation for widening the range of job opportunities after high school or after post-high school education, has not been put across strongly. The great public relations effort of higher education dwarfs the publicity about vocational and technical programs, and is independently bolstered by the college orientation of the public schools. More information about vocational and technical education has to get into the high schools and the homes, and a much greater public commitment to the value and prestige of this kind of preparation is necessary.

We recommend a strong public information effort to improve the image of industry and of occupational education. The objective is to reach youth motivation by improving the public status of work and work preparation that he may aspire to. The information campaign should be coordinated locally, and designed for the directed at specific groups: youth in the public schools, dropouts, public school personnel, parents of school-age youth and community leaders.

As a focal point for changing the public image of work and for providing a sound motivational thrust, we also recommend an Appalachian Skill Fair. This would be an annual exhibit of occupations and occupational preparation programs designed to provide information and to create interest in the rewards and excitement of the world of work.

Another important area in manpower education is better communication within and across levels of education, and between state and local personnel. For the state agencies this means greater knowledge of local problems and a broader service effort to local schools. For the regional universities it means an improved understanding of public school needs with regard to teaching, guidance, and administrative personnel. For the public schools and community college institutions it means greater joint planning of curriculum programs because the task of immediate job preparation is so enormous it extends over both levels of education. One cannot function well independently of the other.

Better communication requires improved curriculum information and we recommend specific procedures for local occupational information surveys to help in the design of program mix and course content. We also recommend that the responsibility for coordinating the communications effort be lodged in a single local organization -- the district-wide advisory committee on education, suggested as an approach to community involvement by the Advisory Committee on Education to the Appalachian Regional Commission. More specifically, the local advisory committee on education should become involved in the dissemination of information on occupational education, in providing guidance for the formulation of local education policy, and in improving liaison with State Government. A logical extension of improved local communication and an active district-wide advisory committee on education is the formation of multi-administrative unit groupings to provide supplemental educational services jointly to all participating units. We recommend that a demonstration project be undertaken to determine the feasibility of this approach in North Carolina Appalachia, with special emphasis on the implementation of Project 16.

In the long run the primary educational objective is to develop a strong regional base in occupational preparation by consolidating program and personnel gains at the different maturity levels made in the past decade. This involves an examination of alternatives in program expansion at the various levels of education, and an examination of the adequacy of current financing of vocational education.

We recommend that the local advisory committee on education permanently undertake continuing examination of the system of public education in each local development district. These studies should be geared toward orienting public education to the world of work.

INTRODUCTION

The principal barrier to the economic development of North Carolina Appalachia is an inadequate number of skilled workers. This was the conclusion expressed in our earlier study, Investment Guidelines for the North Carolina Appalachian Region.

In contrast to the public image of economic distress in Appalachia, the problem here is not where the jobs are coming from but rather where the people are coming from to fill the jobs. The economy is expanding. But shortages of skilled labor -- persons with the educational background for either advanced occupational entry or job upgrading -- are beginning to affect key industries.

We undertook this study to determine what can be done about the problem of not enough skilled manpower for North Carolina Appalachia's growing economy. The objective was to develop specific proposals for increasing the number of skilled workers in the region. Our findings and recommendations are summarized in this report and although they are directed specifically to the situation in North Carolina Appalachia, much of the study has relevance for the State as a whole.

The report is divided into two major parts, the first concerned with the identification and measurement of the manpower problems and the second with program recommendations to meet the problems. The general substance of each part is more particularly described below.

Part I. The Problems Identified

The purpose of Part I is to identify principal difficulties in turning our a sufficient number of skilled workers in the region. Our basic conclusion is that more of the difficulties can be traced back to deficiencies in public school education, and that the elimination of serious manpower shortages requires more adequate preparation for work in the elementary and secondary schools. Public schooling is the only formal work preparation opportunity for about 70 percent of those entering the labor force each year. Unless these people are better prepared to work, not only in today's jobs but in tomorrow's jobs as well, economic growth in the region cannot be sustained.

Part I begins with a chapter on the economic outlook for North Carolina Appalachia, pointing out that growing industrial diversification will result in a greatly increased demand for skilled workers. Chapter II looks more closely at the overall labor situation to 1970, discussing projected skill shortages for the 29-county region and for each of the local development districts. Additional tables are contained in a Technical Appendix which is being presented separately. Chapter III examines the background of manpower education problems, relating them to inadequate work preparation opportunities in the public schools. Chapter IV identifies the specific difficulties facing the public schools and the community college institutions in turning out more skilled workers for the regional economy. Chapter V draws together the study findings in terms of identifying areas in which recommendations should be made. Emphasis is placed upon the need for basic changes in curriculum, teacher education, and guidance education to strengthen the public school rold in work preparation and upon the need for remedial type programs to provide immediate opportunities for work preparation.

Part II. Program Recommendations

The purpose of Part II is to outline programs which will help increase the number of skilled workers coming out of the region's human resource base. Program recommendations are based upon two assumptions:

1. That the existing educational institutions have the resources and the capabilities to meet the region's manpower education needs.
2. That success in manpower education depends critically upon the response at the local level.

With these thoughts in mind, we held a series of meetings with business, education, and government people from each of the local development districts to review the findings contained in Part I. The objective of the review sessions was to initiate local discussion on manpower education needs as a guideline for developing program recommendations in Part II.

The idea behind our program recommendations is that much can be accomplished by making better use of the resources now available. Certainly more money will be needed to do a complete job, little improvement will result. As a guide for spending additional dollars, we have to stand ready to change how current dollars are spent.

The program recommendations in Part II do not require a substantial input of money from either the State or the Federal Government. Neither do they require basic policy changes at the State or local level. What they do require, however, is a strong commitment to meet manpower education needs, backed up by a willingness to spend existing funds now for program development in new areas.

Chapter VI outlines Project 16 -- a remedial type of program designed to provide continuing education and work opportunity for dropouts between the ages of 16 and 18. Chapter VII discusses the initiation of a coordinated local information and public relations program to improve the image of industry and of vocational education. Chapter VIII suggests techniques of obtaining occupational information for curriculum design in occupational education. Tables analyzing the information obtained during this study for the 29-county region and for each local development district are contained in the Technical Appendix. Chapter IX recommends formation of a local advisory committee on education within each district and discusses its role -- that of aiding in communication and coordination between levels of education and between educators and the community at large. Chapter X recommends the formation of multi-unit cooperative ventures to provide educational services on an area-wide basis. Chapter XI recommends a continuing effort to examine possibilities of improving education for occupational preparation in the public schools and suggests that additional research be undertaken to demonstrate the feasibility of providing education services on a multi-county basis.

Chapter I. THE REGIONAL ECONOMY

During the 1950's, continued outmigration forced by the lack of job opportunities cut away at the total labor force. Migration, heaviest in the 18-44 age group and only somewhat less in the under 18 group, took a significant part of the child-bearing population and of the youth. The human resource base did not grow as is evident from the nearly constant school enrollment figures over the decade.

During the early 1960's, the economy of the region began to gain steadily from the low levels of the previous decade. This reflected national economic trends somewhat, but expansion occurred also because labor was relatively abundant and because of proximity to the rapidly growing Southeast market. Thousands of new jobs were added during the first half decade as industry diversified from a base in textiles, tobacco, furniture, and apparel. Skilled labor was absorbed rapidly and the regional backlog of unemployed and underemployed persons was cut in half.

Recent data indicate that growth not only is continuing, it may be accelerating, as year-to-year gains in employment have been steadily larger since 1962. This is reflected in the outlook for 1970. Some firms in the region have increased their 1970 employment forecasts prepared only last year, and our revised projection of 451,700 jobs in the region by 1970 is nearly 37,000 more than the estimate made in our initial study.

Until the economic situation changed in the 1960's, outmigration did not threaten continued regional development; however, once growth started, deficiencies in the labor force base became apparent. Industrial growth and diversification brought new job opportunities into the region, many of which were in occupations requiring post-secondary work preparation or at least some high school familiarization with factory life. There were too few persons available with either formal work education or job experience in these occupations; many of those who could have qualified already had migrated to high wage industrial areas. Still, the region might have adjusted to short-run labor problems reasonably well had outmigration not continued.

Job growth, it now seems, did not halt out-migration. Many positions were filled from the backlog of unemployed and underemployed even as high school graduates and dropouts continued to leave in large numbers for jobs elsewhere. It is only recently that outmigration has appeared to slow down. The evidence is an increase of 12,200 persons in the region's work force between 1965 and 1966, nearly 3,000 more new workers than the largest year-to-year gain since 1962. Also, estimates prepared by the Appalachian Regional Commission show the outmigration rate during 1960-65 is less than one percent annually, compared with nearly ten percent for the 1950-60 decade.

Should outmigration continue to decline, the total number of workers available within the region by 1970 could match the overall job demands of economic growth. However, the important question is whether these people can satisfy the skill requirements of specific occupations. Given current trends it is unlikely that they can, since one-quarter of the potential new entrants into the labor force will be high school dropouts. Furthermore, the "reserve pool" of unemployed or underemployed skilled labor will not be large, having been dissipated by past outmigration and by recent expansion of job opportunities.

Growth Factors

Much of the anticipated economic growth in North Carolina Appalachia will occur because of geographical advantages for manufacturing operations. Situated between two growing industrial areas -- the Piedmont manufacturing belt extending through North Carolina and South Carolina to the east, and the Great Appalachian Valley containing the large urban-manufacturing centers of Tennessee to the west -- the region is in a strategic position for the production and distribution of manufactured goods. North Carolina Appalachia also is within a few hundred miles of nearly all the major urban markets in the southeast and along the Ohio River.

Because of the shift toward markets in the locational pattern of manufacturing activity, proximity to rapidly growing urban-industrial concentrations will become increasingly important for regional development. Geographical position cannot be advantageous, however, without other supports for economic development such as roads, municipal-type services in urban centers, water, and especially skilled labor. The region up to now has been a relatively underdeveloped resource area, with an abundant supply of good quality water, clean air, relatively cheap power and most importantly, a sufficient number of skilled and trainable persons to sustain industrial expansion. But recent economic growth has drawn heavily upon the natural and human resource base, creating potential bottlenecks to continued rapid expansion.

> With the regional growth outlook improving, the task of resource management becomes substantially greater. The challenge is to avert shortages which could prematurely choke off the economic boom. In this report, our concern is limited to the most serious problem -- that of manpower education for economic growth.

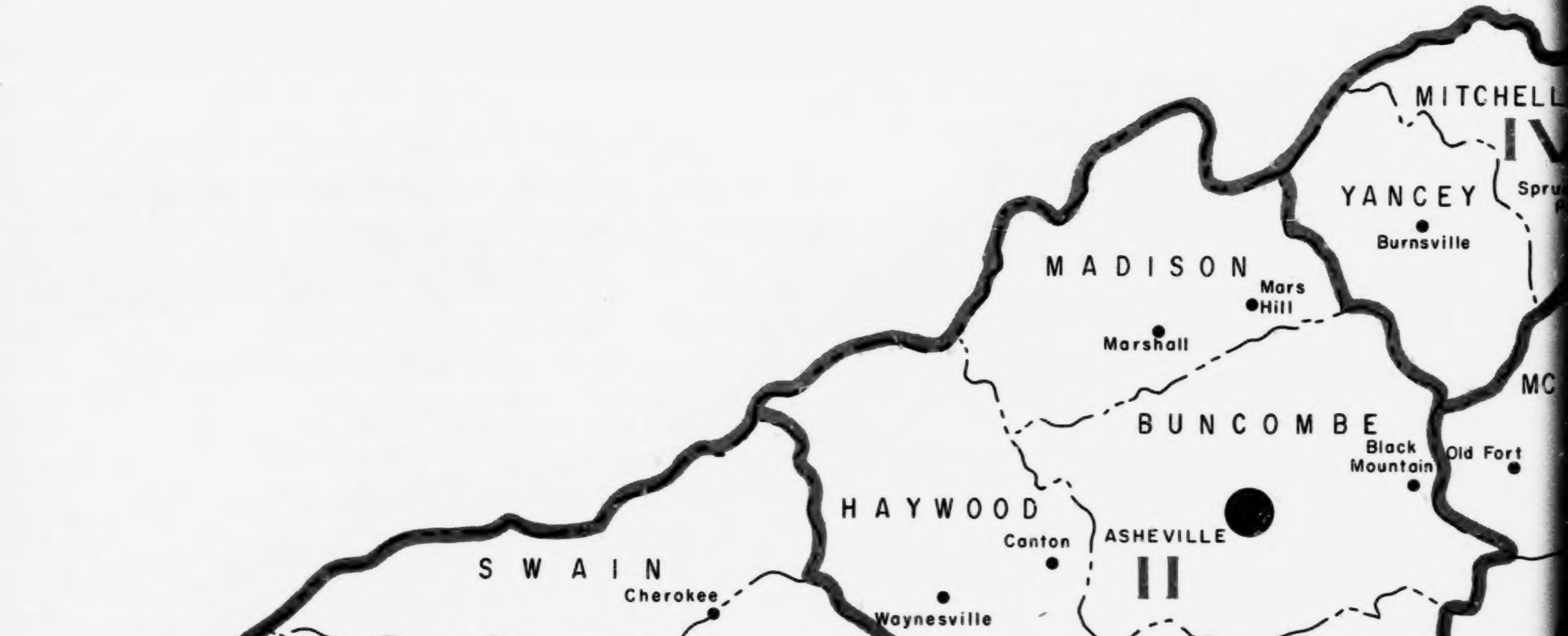
Overall, the regional economy is expected to add 59,300 jobs between 1966 and 1970, 40 percent of which will be in manufacturing. Roughly two-thirds of the gain in manufacturing will be accounted for by traditional industry types -- textiles, apparel, tobacco, and furniture -- a somewhat smaller proportion than in previous periods. Significant gains are expected also in trade, services, and government employment as the entire services producing sector will add 44 percent of the new jobs. Projections of employment in the region are given in Table 1.

Table 1. EMPLOYMENT TRENDS IN THE NORTH CAROLINA APPALACHIAN REGION TO 1970

	Number of Jobs		Numerical Gain	Percentage of Total Gain
	1966	1970	1966-1970	1966-1960
Goods Producing				
Manufacturing	157,530	182,120	24,590	40.2%
Construction	13,450	17,340	3,890	6.4
Subtotal	(170,980)	(199,460)	(28,480)	(46.6%)
Services Producing				
Transportation, Communications and Public Utilities	15,290	17,650	2,360	3.9%
Trade	46,380	55,540	9,160	15.0
Finance, Insurance, and Real Estate	7,690	9,430	1,740	2.8
Services	30,260	37,030	6,770	11.0
Government	37,710	44,590	6,880	11.2
Other 1/	1,480	1,480	0	-
Subtotal	(138,810)	(165,720)	(26,910)	(43.9%)
Total Nonagricultural	309,790	365,180	55,390	90.5
Other				
Agriculture	33,300	31,400	-1,900	-
Self Employed and Domestics	49,240	55,050	5,810	9.5%
Subtotal	(82,540)	(86,450)	(3,910)	(9.5%)
Total Employment	392,330	451,630	59,300	100.0%

1/ Includes mining and miscellaneous services.

Source: North Carolina Employment Security Commission, and 1970 forecasts by Hammer, Greene, Siler Associates.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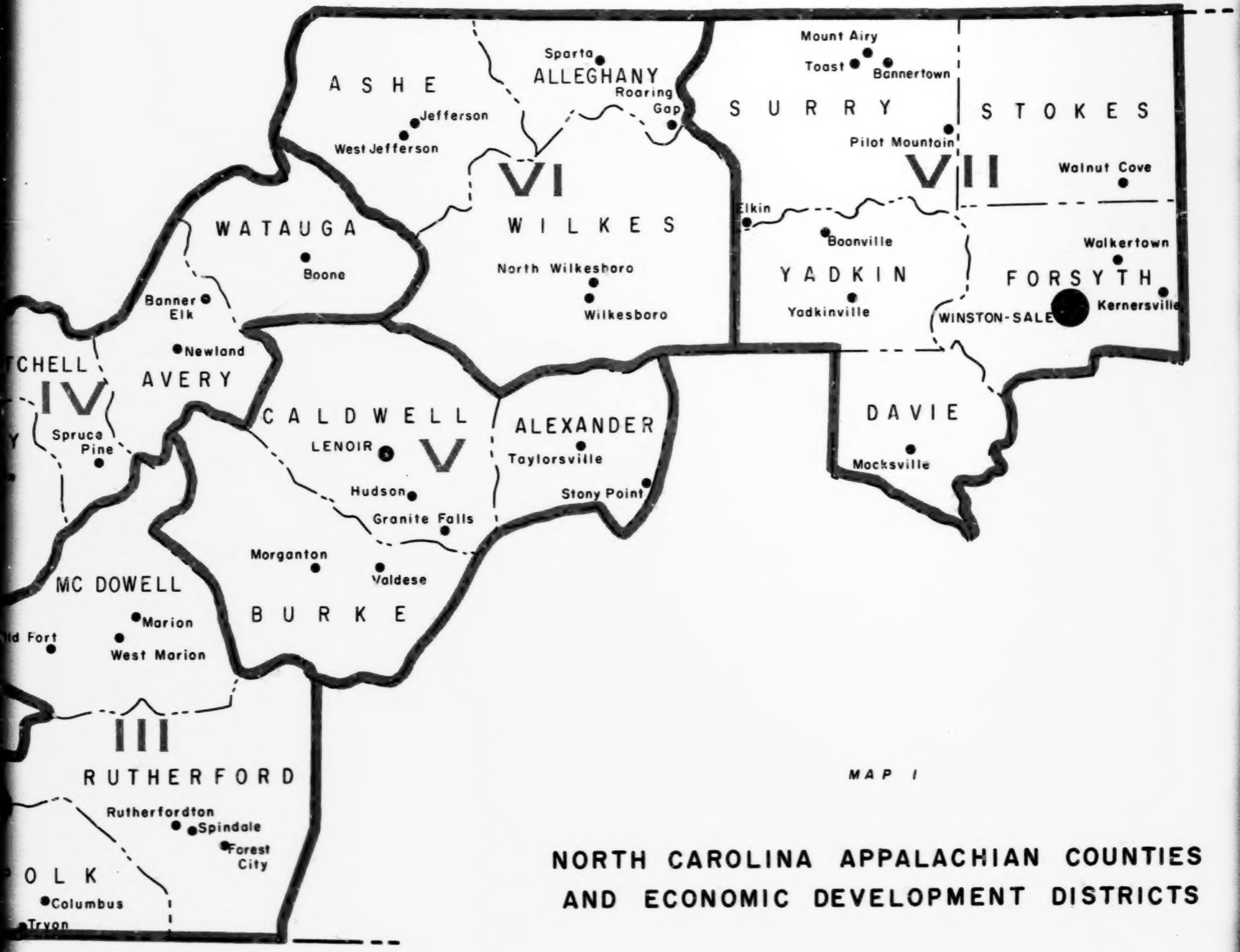
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WINSTON-SALE
Kernersville
Banner Elk
Newland
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Spruce Pine
CALDWELL
LENOIR
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Granite Falls
ALEXANDER
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MC DOWELL
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Valdese
BURKE
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RUTHERFORD
Rutherfordton
Spindale
Forest City
OLK
Columbus
Tryon

MAP I

NORTH CAROLINA APPALACHIAN COUNTIES AND ECONOMIC DEVELOPMENT DISTRICTS

● URBAN CENTERS

——-—— COUNTY BOUNDARIES

▬ DISTRICT BOUNDARIES

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Within the North Carolina Appalachian Region, the growth outlook varies considerably among the local development districts. The districts are shown in Map 1.

The Upper French Broad Region (District I) centered on Ashville and the Northwestern Region (District VII) centered on Winston-Salem are the two with the greatest growth potential. The Upper French Broad Region is the economic heart for a large part of the 29-county area, and has the industrial base to generate economic interrelationships with both the Piedmont area to the east and the urban-industrial centers of Tennessee to the west. Growth is expected to be spurred by expansion of "new-line", market-oriented industries.

The Northwestern Region and particularly the Winston-Salem area, is becoming more closely linked economically with the industrial Piedmont and the cities of Greensboro and High Point. Although it is expected to undergo the largest regional job increase, the effect upon the Appalachian area as a whole will not be substantial. As with the Upper French Broad, expansion of new-line industrial activities oriented to the southeast market will be a major growth factor.

The only other area of substantial growth is expected to be along the Catawba River Valley in the ABC Region (District V). Growth prospects in the four other districts range from moderately good in the Isothemal Region (District III) to slow growth in the Mountain Scenic (District IV). The slow growth areas generally are off to one-side of the mainstream of regional development, and also are the most inaccessible because of the mountain barriers to travel.

Chapter II. REGIONAL JOB REQUIREMENTS AND WORKER EDUCATION LEVELS TO 1970

Our objective here was to determine whether the education profile of new entrants into the labor force would satisfy the occupational requirements of local industry.

We estimated educational requirements by occupation on the basis of a sample survey of regional industries, and then related these estimates to 1970 regional job projections for the entire region. This indicated regional worker demand by level of education. Forecasting the number of high school graduates, dropouts, and the graduates from community college institutions in the region indicated worker supply, also by level of education.

This provided a numbers base for gauging to what extent and for which kinds of persons a shortage probably would occur. However, we must caution against viewing the numbers as precise forecasts of what will occur.

Making an accurate assessment of future manpower needs in any area is difficult. Employment projections are the first step and they are based in part upon the best judgment of existing firms about coming needs, and in part upon what we can anticipate in the way of new industry. Both depend largely upon expectations for the national economy and the resulting implications for the region -- which can not be precisely foreseen. Also, because growth is taking place on a relatively small regional economic base, the entrance of even one large firm could easily upset the manpower forecasts.

Given our admitted lack of clairvoyance, we have made rough estimates of worker supply and demand simply to determine the magnitude of the education effort that appears necessary, and where the emphasis must lie. What we continually want to stress however, is that the program response must be sufficiently flexible to adapt to whatever kind of manpower needs actually emerge.

North Carolina Appalachia is undergoing rapid economic expansion involving a number of new industries with higher occupational skills and an upgrading of skills in many of the older industries. This implies a substantially greater proportion of jobs requiring at least a high school education, especially for new entrants into the labor force. With dropouts accounting for such a large proportion of potential new entrants, it seemed likely, even before the research began, that we would uncover an imbalance between future job requirements and worker education levels. This was borne out by the numbers.

Total worker demand between 1966 and 1970, including new jobs and replacements for those permanently leaving the labor force, will be roughly 78,000 persons. Our estimates of worker demand by level of education indicate that 42 percent of all jobs will require education beyond high school, but only 13 percent will require a college degree. This is shown in Table 2 below.

Table 2. WORKER DEMAND 1966-1970, NORTH CAROLINA APPALACHIA

Level of Education	Number	Percent
Less than high school	7,200	10.2%
High school graduate only	33,900	48.1
Post-high school vocational	5,200	7.4
Post-high school technical	8,800	12.5
Two year college	6,100	8.6
Four year college	6,700	9.5
Post-graduate	2,600	3.7
Total Worker Demand	70,500	100.0%

Note: Numbers do not include 7,500 agriculture workers, self-employed, and domestics.

Source: Hammer, Greene, Siler Associates, 1967. Demand estimates based upon 1967 industrial survey returns, and job replacement projections 1966-1970.

The estimates also indicate that only ten percent of the jobs can be filled by persons with less than a high school education. It is likely, however, that a substantial number of the 7,500 jobs in the agriculture, self-employed, and domestics group will not require a high school education.

Between 1966 and 1970, approximately 57,800 students will graduate from high school and 18,800 persons will drop out, a total of nearly 77,000 potential additions to the labor force. Only 43,200 of these persons, the sum of high school dropouts and direct entrants into the labor force, will be going immediately to work, and this figure is somewhat high because it does not account for marriage taking young women out of the labor force. Over 21 percent of the potential new workers will be going on to a four year college although perhaps one-half of these will not finish, but most will not be ready to enter the labor force until after 1970. Many will not return to the region if current patterns continue to be any kind of a guide, and this implies that some of the required college graduates may have to be "imported". Table 3 illustrates potential new workers by education background.

Table 3. POTENTIAL NEW WORKERS 1966-1970, NORTH CAROLINA APPALACHIA

Level of Education	Number	Percent
Less than high school	18,800	24.5%
High school graduates:		
Direct labor force entrants	24,400	31.9
Post-high school - two years or less	14,800	19.3
Four year college	16,300	21.3
Other	2,300	3.0
Subtotal	(57,800)	(75.5%)
Total Potential New Workers	76,600	100.0%

Source: Hammer, Greene, Siler Associates, 1967. Worker estimates based upon projections of high school dropouts and projections of the distribution of high school graduates among work, other (mostly military), and advanced education.

Because of past outmigration, the total number of potential new workers within the region is not sufficient to meet the worker demand requirements of economic growth. If everyone went directly to work after high school, the region would still be short about 2,500 workers.

But in addition to those coming through the public schools, there will be 15,000 to 18,000 adult unemployed and also a sizeable number of married women who possibly could be drawn into the labor force. On an overall basis, the total number of dropouts, high school graduates (excluding four year college and other), and unemployed is between 73,000 and 76,000 persons. Adding 3,000 from returning military and those enrolled in two year programs prior to 1966, plus perhaps 15,000 married women, brings the total of available workers between 1966 and 1970 to a maximum of 94,000.

This worker base, calculated on the assumption of no migration loss, will not alone be a sufficient base to sustain the creation of 78,000 job opportunities. It likely will have to be bolstered by a substantial number of college graduates and others returning to the region during the next few years as well as by increased commutation from bordering areas and probably inmigration. Otherwise, the 78,000 job opportunities probably will not materialize. Even if the total number of jobs is less, however, the problem of a skilled labor shortage will remain.

The relationship between skill supply and demand has been calculated only for education levels up through two years of college. Supply and demand beyond that level have not been calculated partly because this is difficult to do, and partly because colleges and universities in North Carolina Appalachia are not geared specifically to prepare graduates for jobs in the region.

The figures indicate that 11,600 persons with less than a high school education will not be able to meet job requirements of regional industry other than openings in the agriculture, self-employed and domestics group. Even with these opportunities, it is likely that over half of the dropouts will need additional preparation in order to secure a position.

The deficit situation with respect to high school graduates implies that industry and advanced education programs will continue to compete for high school graduates. The tightness expected in this category, however, should improve the employment outlook somewhat for the high school dropouts.

Overall capacity of the vocational programs in the community college institutions appears sufficient but detailed occupational comparisons by region are necessary to confirm this. For occupations requiring either a technical education or two years of college, the deficit appears substantial. Table 4 illustrates:

Table 4. NEW WORKER SUPPLY AND DEMAND, 1966-1970, NORTH CAROLINA APPALACHIA

Level of Education	Industry Demand 1/	Program Supply	Surplus (+) Or Shortages (-)
Less than high school	7,200	18,800	+11,600
High school graduate only	33,900	24,400	- 9,500
Post-high school vocational	5,200	6,200 2/	+ 1,000
Post-high school technical	8,800	4,400 2/	- 4,400
Two year college	6,100	3,300 2/	- 2,800

1/ Does not include 7,500 agriculture workers, self-employed, and domestics
2/ Estimates of graduates only from the technical, vocational, and college parallel programs of community college institutions within the region.

Source: Hammer, Greene, Siler Associates, 1967.

The problem of deficiencies in technical and college parallel graduates, however, goes beyond program limitations of the community college institutions. Although program capacity in the latter will permit only 13,900 graduates*, forcing some students to go outside of the region, the 14,800 students expected to enter all post-secondary programs between 1966 and 1970 are far less than the 20,100 persons needed. If more entrants into technical and two-year college education cannot be squeezed out of high school graduates or from college "dropouts", then inmigration is the only hope of averting a shortage of skilled labor.

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*With the proprietary business schools and private Junior Colleges contributing perhaps 1,000 more.

Our estimates of worker supply by educational level are based upon assumptions about a general decline in the dropout rate, and a general rise in the proportion of high school graduates going on for advanced education. To some extent, therefore, the figures already reflect changes in education programs and in the image of vocational education. Should these changes not occur, then it is reasonable to expect that the proportion of workers with higher levels of education will be less.

As expected, the situation differs greatly among the seven local development districts. An analysis of each district is contained in a separate technical Appendix.

Chapter III. MANPOWER EDUCATION PROBLEMS

Our objective is to better understand local program difficulties in trying to close the gap between the need for and the availability of skilled manpower.

The main concern of the study, therefore, is the program effort of education institutions since this represents the established mechanism for turning out skilled workers. Supply and demand analysis means little unless it is related to the problems faced by these institutions in trying to better prepare people for the world of work.

Our approach was to go directly to the institutions -- the public schools, the community colleges and technical institutes, and the private business schools. We talked first in Raleigh with representatives from the Department of Community Colleges, the Department of Public Instruction, and the Board of Higher Education, to establish a perspective on education and related programs. This was followed by questionnaires to local public school superintendents and to presidents of post-secondary schools, and by personal interviews at 50 institutions.

Early in the study, it became apparent that the root of the problem of turning out more skilled workers lay in the public schools -- at the elementary and at the secondary levels of education. This is because public school education is the only formal work preparation for about 60 percent of the new entrants into the labor force. If the educational background of most of these persons prevents them from getting anything other than unskilled jobs and also impedes occupational advancement later on, then it is nearly impossible to bring about a substantial increase in the region's complement of skilled labor.

To make significant gains in the supply of skilled labor two things are necessary:

1. The number of persons entering the labor force from the public schools who are inadequately prepared for work must be cut down, and
2. The number of persons with advanced educational preparation must be increased.

Program improvements therefore have to be aimed at both the basic work preparatory role of the local public schools and the more specialized occupational preparatory role of the post-secondary institutions.

The Nature of the Problem

The manpower problem in North Carolina Appalachia, an inadequate supply of skilled labor, is essentially a problem in public school education, resulting from deficiencies in basic education and work preparation for non-college bound youth. This situation is not unique to North Carolina Appalachia; it exists virtually in every school system in the country. What is unique, however, is the importance of "home-grown" skilled labor to continued economic growth, since the region cannot rely upon attracting talented inmigrants -- at least not during the earlier stages of development.

There are two dimensions to the manpower problem:

1. The current backlog of unemployables -- resulting from inadequate work preparation in the past, and
2. The youth now in school who are receiving inadequate preparation for work.

Most of the current emphasis on manpower problems deals exclusively with the current backlog. The massive nationwide attack upon unemployables, unemployed, and underemployed is designed as a remedial measure to give work preparation skills and work skills to those who lack them. It is a make-up effort for what ideally should have been implanted by the public schools, but the problem has been treated as if it were independent from the issue of public school preparation. Probably this is because the reasons for dropouts and inadequately prepared high school graduates have been sought primarily in the youth -- lack of motivation, poverty, poor home environment, and the like.

Not enough emphasis has been on difficulties with the system of public education that affect the youth's academic performance. Yet more educators are coming to realize that the problem of high school dropouts particularly, is a two-way street -- both the system and the student need to be constantly re-examined. We feel that the proper concern of this study should be the future work preparation of youth, not the backlog problem. Regional growth has cut deeply into this backlog, leaving mainly a hard core of unemployables without jobs. Programs already are in existence -- State, local, and Federal -- to attack the problem of unemployables. For North Carolina Appalachia, on the other hand, the critical problem is that of youth coming unprepared into the labor force, since they are the human resource base for development.

The immediate task is to get enough skilled workers from current high school students to meet job requirements during the next three years. These persons have gone beyond the point where changes in public education will be of immediate benefit, and therefore remedial-type efforts will have to be substantial during the first few years. But we cannot limit our concern just to 1970. Unless something is begun now in public school education, the backlog problem in the future will become insurmountable.

Issues in Public School Education

The educators in North Carolina Appalachia with whom we have talked think that it is time to view the problem of dropouts and inadequately prepared high school graduates in terms broader than individual motivation or home environment. Certainly these are problems, but the point is that the schools have little to offer the potential dropout that would meet his interest in a way acceptable both to him and to the school system.

The idea that "everyone who can should go to college" is basic to the difficulties within public school education. The single clear goal of elementary and secondary school curricula appears as preparation for college, even though only one in five ninth grade students will enter a four year college, and perhaps one in ten will graduate. The system of public education is not geared to provide a total curriculum which fits the needs, background, capabilities, and most importantly -- interests, of a majority of school children.

It is difficult to do very much about this because responsibility for public education is shared widely in our society. Emphasis upon college by parents is both initiated and reinforced by local school boards, principals, teachers, teacher-education institutions, colleges and universities, industry, and labor. The entire system of public education is oriented toward college preparation and has not been responsive to the needs of the non-college bound youth.

Although the needs have been partially recognized, public education has not moved very far toward meeting them. One reason, particularly important in North Carolina Appalachia, is the lack of money for program expansion in occupational preparation. Another reason is that the problem of inadequately prepared youth has been viewed solely in terms of personal and environmental factors going beyond the traditional responsibility of the school systems. But the greatest barrier has been an inadequate community response to help formalize a strong commitment to occupational preparation.

Two ideas which have shaped education policy, especially in North Carolina, also have tended to perpetuate existing conditions. Although both ideas are perfectly sound, each is terribly difficult to implement right now without fostering some unintended results in public education. One idea is drawn from observation of contemporary social realities -- that there is a social stigma attached to the student going to an exclusively vocational high school. This received perhaps its clearest expression in Dr. James Conant's forceful argument for bringing together all students in a comprehensive high school.

The other idea is drawn from historical observation -- that to develop an informed, capable, and responsible citizenry, a liberal education is necessary. This means offering a broader course of exposure than only those subjects important in work preparation.

The unintended results in public education have not occurred primarily in the area of vocational courses -- they have been encouraged to expand. Rather, problems have arisen because basic courses in English, Mathematics, History, and Social Studies are required, and the schools have difficulty making these courses meaningful to all students. The curriculum rarely is designed for anything other than college preparatory and each subject is presented in an academic manner. Too many students have lost interest in school because of this hurdle and, in effect, have been "forced out" of the system.

Current improvements and experimental approaches in public education are geared toward better preparation for college. Most educators think, however, that the greatest challenge facing the public schools is to provide much more for the four in five ninth grade students not going on to college.

Needs in Public Education

Although there were differences of opinion regarding the kind of effort needed in the public schools, almost all interviewed agreed that a broader vocational curriculum was of high priority. In nearly all of the high schools of the region the vocational curriculum is far too limited, and in many cases it does not extend beyond agriculture and home economics. The value of a well-developed vocational education program both as a holding factor in the schools and as a preparatory course for work, many felt, had been fully demonstrated. Most important is the fact that the student can relate well to his shop or outside work experience and therefore performs well. Success has great staying power. So also does the income in some courses.

The shop experience and in-school cooperative training with industry also provide an opportunity to learn how to work. Recent studies have considered the opportunity to learn how to work as the really significant preparation for unskilled and semi-skilled jobs.

Some educators, however, caution against embracing an improved vocational education as a panacea, especially if it means only more shop courses. Answers to problems in public school education, they argue, are not likely to be found in the established ways of doing things. More shop courses are of little help without a basic reorientation of the schools, and a corresponding modification of the curriculum.

In the manpower context, the attention given elementary and secondary school education has centered on vocational education needs and how they can be met. The concern for vocational education, however, rarely has been tied to the framework and philosophy of public education, and that is what is important now. We have to look at education as a whole and decide what we are trying to educate for and what are the best ways of doing this. Implied here, is the beginning of an answer -- broadening of the vocational curriculum must be instituted as part of a general reorientation of the public schools to the world of work.

This seems basic. It is the best way known to prepare non-college bound youth for the next step.

In a recent study by the W. E. Upjohn Institute for Employment Re-

research, the question that guided their work was how well the schools prepared the child for what he did next. In North Carolina Appalachia, very little preparation or guidance is given to more than half of the ninth grade students now going directly into the labor force -- with or without a diploma. Considering that this group will represent about 60 percent of all new entrants into the labor force, low investment in their work preparation compared to those going on to college seems difficult to comprehend. It was repeated many times to me that we no longer can afford to view vocational education as a dumping ground for the academically poor and culturally disadvantaged.

Reorientation of public education requires occupational information to be presented as part of the curriculum and that teachers understand the world of work and the importance of a non-academic approach in basic subjects. Educators argue that the latter is a key element, because difficulties arise more from the way the subject matter is presented than what the subject actually is. Many problems seemingly can be traced back to the education of teachers -- their orientation toward classroom achievement, textbooks, and academic presentation of subject matter, and lack of information about work. Most superintendents feel that rigidity in teaching techniques and course content is especially widespread in the upper grades of high school.

Also, teachers tend to resist or have difficulty teaching a subject differently to students in the same grade or age group. Generally, school teachers prefer to work with the better students, experiencing more satisfaction from results. Yet the poorer students need the best teachers because textbooks and teaching aids in areas other than college preparatory either are inadequate or non-existent. Creativity in approach, relevance to the student's frame of reference, and a closer teacher-pupil relationship appear most important.

Guidance, although it is relatively new in North Carolina and cannot now be fully evaluated, does have some built in limitations. Theoretically, the role of the guidance person is to help the student understand how he can fit into the world by indicating what opportunities are open to him. Many educators argue that this role is more important for the non-college bound youth since those going on already have made a basic decision.

However, guidance personnel are very much oriented toward college and generally are seriously deficient in their own familiarity with work careers outside of academic areas. Most have grown up in a college dominated atmosphere, and the guidance function itself has become widespread in response to the complexities of getting into college. Some educators feel that guidance involvement with the non-college bound is limited to the suggestion that the student select vocational courses. Again, the root of the difficulty goes back to guidance preparation programs in education institutions.

But probably the most serious problem is that there are not enough qualified guidance people in the school systems. Guidance has been confined primarily to the high schools where staff limitations have prevented a serious effort at individual counseling. Virtually nothing is being done at the elementary level where both guidance and psychological services are necessary to cope with emerging problems of the child.

Life outside of the school is critical to a child's in-school behavior and performance. Most educators have accepted the fact that the school must become concerned with and involved in the total environment of the child. Putting first things first, this means meeting needs of the child for food (hot meals), clothing, medical and dental care, counseling within the home, and even income. The needs of the schools include teacher aids, library aids, programmed instruction materials, reading labs, library books and so on. Recognition of the importance of these services in improving the environment for learning has also led to recognition of the role of para-professional personnel within the school.

Although a start has been made in non-curriculum services mainly through use of federal funds, this money alone is insufficient to do the job. A greater non-federal commitment is necessary. School is a social event in the rural mountain areas. Most children would rather go than stay home since home is so isolated. If they have clothes they will go, and if they have adequate food they will be better able to learn.

Summary

The critical manpower problem in North Carolina Appalachia is manpower education. This is a joining of two words not often linked together to express a basic conclusion:

> That the elimination of serious manpower problems requires better educational preparation for work at the public school level.

Manpower tasks usually have been conceived as the training and/or retraining of adults and lately of unemployed youth. They have been remedial efforts, attempting to make people employable because public school work preparation was unsatisfactory.

Education in this context was narrowly conceived as vocational education, the specific skill training needed to provide a saleable skill for the potential employee.

The manpower education theme is a broader view of the whole education process as a basis for work preparation which must come as part of the public school curriculum. Unless this is recognized, the training and retraining of people will become an enormous task in the future, a task that is avoidable.

It seems that the public schools want to accept responsibility to better prepare youth for what they undertake next. For the school response to become effective, however, many things must be done within public education. They can be grouped under four areas:

1. Orientation of the public schools to the world of work.
2. Improved teacher education and more teachers in occupational education.
3. Improved guidance education and substantially more guidance personnel.
4. Increased non-curriculum services.

These are the preconditions for a liberal education to become truly meaningful to all students.

Chapter IV. DIFFICULTIES IN TURNING OUT MORE SKILLED WORKERS WITHIN NORTH CAROLINA APPALACHIA

The State of North Carolina formalized its objectives with respect to vocational education in the Annual Descriptive Report for Vocational Education, published by the Division of Vocational Education, Department of Public Instruction (1966-67). This publication stated that ...

> "North Carolina is committed to the long-range goal of providing vocational and technical education opportunities for: (1) high school youth who are available for full-time study; (2) high school graduates and school dropouts who are available for full-time study; (3) employed adults who need and are interested in upgrading themselves vocationally in their present jobs or in retraining for a different job; and (4) persons who need remedial or special education as a prerequisite to the pursuit of regular vocational training. Moreover, the State is committed to providing these opportunities within reasonable commuting distance for all its citizens."

All public education below the college level in North Carolina is the responsibility of the State Board of Education. The administration of education policy of the State Board is carried out by the Department of Public Instruction, which is responsible for education in the secondary schools, and by the Department of Community Colleges, which is responsible for education in the post-secondary institutions (Community Colleges and Technical Institutes) within the Community College System.

As stated further in the Annual Descriptive Report for Vocational Education,

> "The State's policy in achieving this goal is: (1) to expand vocational education for high school youth as a part of the program of studies of the comprehensive high school with as diversified offerings as the size of the school will permit; (2) to provide appropriate

> full-time vocational education for high school graduates and school dropouts in area vocational-technical institutes, and community colleges located within commuting distance of all citizens; (3) to provide appropriate vocational education courses within the post-secondary area...technical institutes for employed adults to upgrade themselves in their present jobs or to prepare for a new job; and (4) to provide basic adult education and special remedial courses and/or learning opportunities for youth and adults who have special educational needs as a prerequisite to employment."

North Carolina uses State and local school bonds usually to provide funds for facility construction in the comprehensive high schools; however, funds from the Appalachian Regional Development Act have supplemented state and local money "in a very few schools". Funds from the Vocational Education Act of 1963 for the construction of area vocational schools are used exclusively in the post-secondary institutions; none of this money is expended for construction of high school vocational facilities.

The Appalachian Background

Public education in North Carolina Appalachia has been influenced primarily by four things -- roads, population, money, and the economy.

With poor roads, crossing over or going around mountains took so much time that many communities remained fairly isolated and independent. School population was confined to local areas and the public schools remained small. Even today, although road access is good within most of the region, there still are problems of time and distance impeding school consolidation at the elementary and secondary levels. The Community College system has not been developed to the point where each institution serves people within a commuting radius limited to twenty-five miles.

Population was thinly scattered except for a few cities, and county school systems as a whole were small. Today, some of the school systems have less pupils than 12 years ago, and consolidation even of all schools would not be sufficient for a large, modern high school in some counties.

Traditionally, the local tax base was insufficient for doing virtually anything that cost a lot of money. This situation has not changed very much in most counties, and it affects vocational education particularly because a proportionately greater local funding effort is required to provide the local share of teacher's salaries and equipment.

Agriculture and old-line, low skill industries for years dominated the regional economy. Except for those few going on to college, a high school education rarely was necessary for work. Today, new-line industries have become important, agriculture has changed considerably, and old-line industries are experiencing job upgrading as a result of technological change. The need for a high school education and for post-secondary education is far greater.

Even though area economic development has been substantial, inadequate roads, scattered population, and lack of money still hamper local education efforts, contributing to the difficulties in turning out more skilled workers.

Expanding Vocational Education in the Public Schools

We have singled out vocational education, even though shop courses alone are not the answer to a skilled labor force, because expansion problems here reflect the more general difficulties of turning out skilled labor. Furthermore, broader vocational course offerings are one of the first requirements of a reorientation of public education to the world of work.

The philosophy and approach of the State Division of Vocational Education is best brought out by the "Suggested Pattern for Vocational and Technical Education in North Carolina High Schools" contained in its publication Vocational Education Opportunities for North Carolina High Schools (1967-1968).

> "The courses listed as possible vocational offerings at the ninth grade level may be characterized as 'introductory' courses. Reserch in vocational maturity indicates that this is the age in which students begin to look at themselves and their opportunities in the world of work more realistically. They should also begin to look at their future roles as homemakers. They need to know more about occupations, occupational requirements, and the educational opportunities for meeting these requirements. Developing an awareness of the need for occupational and educational planning is a key concept here.
>
> Tenth grade offerings are designed to help a student explore in greater depth some of the occupational interests developed as a ninth grader. At this point students select the broad occupational area (trade and industrial, distributive education, business occupations, home economics education, or agricultural education) in which they wish to do further exploration and/or begin to develop skills which might be applicable to clusters of occupations within the broad areas. Students at the tenth grade level may enroll in courses in any of the broad areas. It is hoped that most of these enrollees will have taken one of the suggested courses for the ninth grade level, although these are suggestions and not necessarily prerequisites.
>
> Courses offered at the eleventh and twelfth grade levels are characterized by 'specialization'. Specific skills for specific types of occupations are taught. Crossover between areas is possible between the eleventh and twelfth grades by students whose occupational aspirations change, but these should be much fewer than crossovers at the lower grade levels.
>
>> Attention is called to the fact that vocational education at the high school level is not terminal education. Graduates (even those going directly into employment) should be encouraged to enroll in post-high school vocational and technical education programs either on a full-time or part-time basis."

Vocational education teaching positions are allotted by the State in addition to the regular allotment of teaching positions on the basis of average daily attendance. The State reimburses local administrative units for vocational teaching salaries at the rate of two-thirds for Agriculture and Home Economics, and three-fourths for each of the other four areas.

Vocational teachers must be certified by the Division of Professional Services and only those certified can teach reimbursable courses.

Aided by the Vocational Education Act of 1963, the State Division of Vocational Education has attempted to develop comprehensive course offerings in the following areas:

1. Agriculture -- for both youth and adults that is geared at the secondary level to provide a foundation of learning for additional education or jobs, and is geared for adults to provide an opportunity to acquire new agricultural technology as part of improving their vocational competency.

2. Home Economics -- where the basic homemaking courses comply with education for useful employment and where eight courses have as specific objectives the training for entry-level employment.

3. Trade and Industries -- providing a balanced program of classroom study and practical work experience in a variety of occupational areas that is structured around three course groupings: Introduction to Industrial Education, Trade Preparatory Training, and Industrial Cooperative Training (part-time employment and on-the-job training).

4. Distributive Education -- offering preparation for careers in distribution, marketing services involving both cooperative type education and preparatory (classroom) education.

5. Business and Office Education -- designed for students with career interests in clerical, stenographic, bookkeeping and data processing occupations, and involves preparatory, cooperative, and data processing (pilot) programs.

6. Introduction to Vocations -- which is a ninth-grade elective course for both boys and girls designed to introduce them to the world of work and their opportunities in it, and to help students in planning for their educational and occupational futures.

Against this background we can examine the vocational program development in North Carolina Appalachian schools. Total 1966-67 enrollment in vocational programs was 30,281, representing 45.7 percent of total high school enrollment, only slightly below the state average of 46.8 percent. The distribution of students among courses also is close to the State average, but indicates greater relative emphasis in agriculture, home economics, and distributive education and decidedly less emphasis in introduction to vocations.

Table 5. DISTRIBUTION OF VOCATIONAL ENROLLMENT AMONG COURSES, 1966-1967

	State		Appalachian Region		Appalachian Region As A Percent of State
	Number	Percent	Number	Percent	
Agriculture	41,419	26.5%	8,444	27.9%	20.4%
Home Economics	65,532	42.0	12,876	42.5	19.6%
Trades and Industries	22,638	14.3	4,009	13.3	17.7%
Distributive Education	8,838	5.7	2,002	6.6	22.7%
Introduction to Vocations	15,712	10.2	2,606	8.6	16.5%
Office Education	1,985	1.3	344	1.1	17.8%
TOTAL	156,124	100.0%	30,281	100.0%	
Percent of High School Enrollment		46.8%		45.7%	19.3%

Source: "Vocational Education Student Enrollment by Administrative Unit by Program", State Board of Education, Division of Vocational Education, January 1967.

The twenty-nine county region has 19.3 percent of the total State enrollment in vocational education. Wherever program enrollment exceeds this percentage, it is reasonable to assume a greater than average concentration. This occurs in Agriculture, Home Economics, and Distributive Education, although the latter probably results from an unusually low effort in distributive education within the Coastal Plains region. The Introduction to Vocations program is considerably below average, and the Trade and Industry and Office Education programs only somewhat less so.

Generally, the vocational program effort in the twenty-nine Appalachian Counties seems inadequate. Only 23 of the 41 local administrative units have as high a percentage of students enrolled in vocational programs as the regional average and in 13-units the enrollment is less than 40 percent, the lowest being 20.6 percent.

Looking at the program offerings we find that in only 13 units are five or more programs offered. If we define adequate program offerings as only those where student participation is at least equal to the regional average, six units offer five adequate programs and 24 units offer two or three adequate programs. The data are summarized in Table 6 on the following page.

Table 6. PROGRAM OFFERINGS OF LOCAL ADMINISTRATIVE UNITS IN NORTH CAROLINA APPALACHIA

Number Of Program Areas	Units Offering Programs		Units Offering Adequate Programs[1]	
	Number	Percent	Number	Percent
2	8	19.5%	11	26.9%
3	8	19.5	13	31.7
4	12	29.3	11	26.8
5	7	17.1	6	14.6
6	6	14.6	0	-
TOTAL	41	100.0%	41	100.0%

[1] Counting as adequate, programs in which enrollment at least equals the regional percentage of enrollment in that program (with the exception of agriculture and home economics where offerings are accepted as adequate).

Source: "Vocational Education Student Enrollment" op.cit.

Clearly, an overwhelming proportion of the local administrative units in the region have not yet reached the State goal of a comprehensive vocational program offering.

Comparing course emphasis with actual job distribution we find that 40 percent of the jobs are in manufacturing yet only 13 percent of the vocational enrollment is directly related to manufacturing. Agriculture has 28 percent of the enrollment, yet only accounts for somewhat more than 8 percent of the jobs. The highest proportion of enrollment is in home economics, most of which is not occupationally oriented. Home economics is included in the comparison since it is part of the federally funded vocational program. (There are other courses within the general curriculum not aided by federal funds which do offer occupational preparation, but they have not been included in the analyses.) Table 7 illustrates:

Table 7. COMPARATIVE DISTRIBUTION OF EMPLOYMENT IN HIGH SCHOOL VOCATIONAL COURSES AND TOTAL EMPLOYMENT -- NORTH CAROLINA APPALACHIAN REGION

	Total Employment (1966) Percent Distribution
Goods Producing:	
Manufacturing	40.2%
Construction	3.4
Subtotal	(43.6%)
Services Producing:	
Transportation, Communications, and Public Utilities	3.9%
Trade	11.9
Fire, Insurance, and Real Estate	1.9
Services	7.7
Government	9.6
Other 1/	.3
Subtotal	(35.7%)
Total Nonagricultural	78.9%
Other:	
Agriculture	8.5
Self-employed and Domestics	12.6
Subtotal	(21.1%)
TOTAL EMPLOYMENT	100.0%

	Vocational Enrollment (1966-19 Percent Distribution
Agriculture	28.0%
Home Economics	42.4
Trades and Industries	13.3
Distributive Education	6.5
Introduction to Vocations	8.6
Office Education	1.2
Total Enrollment	100.0%

1/ Includes mining and miscellaneous services

Source: Tables 1 and 5.

The figures indicate an obvious imbalance in the vocational curriculum from the viewpoint of relevancy to job demand. Our overall estimate of relevancy is that 70 percent of the vocational enrollment is geared to less than 20 percent of the job market and 23 percent of the enrollment is geared to more than 80 percent of the job market.

Furthermore, agriculture is a declining industry in North Carolina Appalachia; we anticipate a loss of nearly 2,000 jobs by 1970, and an overall decline to less than seven percent of all jobs by then. This is not consistent with continuing emphasis on the vocational program in agriculture. The Applachian region is far removed from the situation of the Coastal Plains where in many counties agriculture accounts for more than one-third of the jobs. In no local development district is agriculture expected to account for as much as 15 percent of the jobs by 1970, and in only two districts will it exceed ten percent. In no district is an increase in agricultural jobs anticipated; there will be an actual decline in every single district.

Factors Limiting Program Expansion

There are four-basic factors limiting program expansion of vocational education at the secondary level. These are:

1. A poor community image of vocational education
2. Lack of local matching funds
3. Shortage of personnel
4. Predominance of small schools

Image Within the Community. In the early stages, vocational education was thought of as a separate part of the educational system, an area for the academically poor and for those who were disciplinary problems. Because of the student image and the fact that the curriculum was dominated by agriculture and home economics, local industry rarely was a major source of support for the program. Today, the traditional poor-student complex is being overcome, both inside and outside of the schools, but an image problem persists.

The status of industrial jobs within the community affects local willingness to spend for a broader vocational curriculum and colors attitudes toward educational orientation of the public schools. Generally, factory jobs have had a poor image although their status has improved somewhat as area economic well-being has advanced, particularly from new industry growth. More community leaders now see the relationship between expanded economic activity, a skilled labor force, and vocational education.

But where old-line industry remains predominant, the "mill environment" complex still taints factory jobs. Few firms have tried to counteract this view by emphasizing the modern environment of industrial plants and the advancing nature of occupational skills.

Within the Negro community, where the payoff in terms of more skilled labor could be the greatest, job training never has had popular acceptance because it always implied menial tasks.

The unfavorable image is reflected in lack of community financial support for expansion at the secondary level even where post-secondary support may be enthusiastic. It also is reflected in student enrollment below what might otherwise be expected.

Funding. Vocational education programs ordinarily cost more than college preparatory or general education programs because of shop-type facility needs, equipment, and materials. Equipment must be replaced periodically as it becomes obsolete, and materials are a recurring expense.

The local administrative unit has the obligation to supply the physical facility for vocational education, and is responsible for 50 percent of equipment costs. In addition, the local unit pays one-third of the salary for allotted agriculture and home economics teachers and one-fourth for teachers in the four other program areas. Because State policy channels construction money under the 1963 Act to post-secondary schools, state and local bond issues are the only sources of funds for expansion of facilities that are not part of a comprehensive program. Appalachian Regional Commission grants have been used in a few instances to construct vocational facilities as a part of a comprehensive high school.

Without facilities and equipment, the local units have had to forego substantial program expansion and often found it difficult to obtain additional teaching positions from the State allocation. Unless the unit planned a sizeable vocational effort as part of a program for a comprehensive high school, local funds had to be used to enlarge existing facilities or construct new ones. Funding for step-by-step expansion just is not available otherwise.

In the past, many of the Appalachian county and city units were without sufficient resources to pick up even their share of teacher salaries. Consequently the vocational curriculum never was very extensive and in most units it was confined largely to crop agriculture and home economics for the homemakers. This situation persists even today.

The local units are in a more favorable position with respect to expansion of college preparatory and general education programs. These do not ordinarily have unusual equipment and materials requirements and the state grant program pays 100 percent of base teacher salaries for an alloted number of positions.

There are some vocational programs such as Industrial Co-operative Training and Distributive Education that do not require a substantial outlay because they are carried on in conjunction with industry and business. However, the poorer administrative units tend to be more isolated and less developed, and local economic activity often is insufficient to support these programs on a large scale. Furthermore, local businessmen sometimes resist taking on Negroes as trainees.

Personnel. Vocational education is more difficult to teach than other areas of education because it requires close personal supervision and much less reliance upon textbooks. Classes cannot be large, and therefore more teachers are necessary than for a comparable enrollment in a college preparatory curriculum. Attracting vocational teachers is particularly difficult because schools compete with industrial wages for qualified personnel and because many of the areas are so isolated. Where local talent is available, such as in carpentry or bricklaying, teacher certification regulations often impede using these people.

In many cases, the limitations on courses to be offered result from lack of qualified teaching personnel. In some cases, counties rely heavily upon the "Voc-ag" teacher to offer instruction in areas other than agriculture. Although sometimes this has worked out, often it has not because the instructor continues to teach in an agricultural vein no matter what the course title is, and keeping agricultural instructors abreast of curriculum changes within the field is no small matter itself.

School Size. In a 300 to 500 student high school, a broad vocational offering is uneconomic because of the very high cost per student. With two or more high schools of this size in an administrative unit, the cost of duplicating even a limited curriculum can become prohibitive.

Consolidation long has been advocated as the approach to providing a broad curriculum in all areas of education. Although consolidation in North Carolina Appalachia has been impeded by poor roads and strong local feelings, many of the units have succeeded in combining smaller schools into larger physical plants.

Still, high school was taught in 113 separate buildings during the 1966-67 school year. Grades 1-12 were taught in 48 buildings, and grades 9-12 only, in 45 buildings. With school consolidation in Yadkin County, schools teaching grades 9-12 will out number those teaching grades 1-12 this year for the first time. Only three of the 29-counties in the region and only 16 of the 41 administrative units have one high school.

Consolidation is not without problems, however. In a consolidated school, the experience is much more impersonal for the child; he comes to the school with many doubts -- it is a big step. Another problem is increased travel time which tends to limit participation in extra-curricular activities. It is not surprising that the initial effect of consolidation has been to increase the dropout rate.

Since consolidation rarely has resulted in a single high school within a county, an expanded vocational curriculum means duplication of facilities. In some cases, curriculum expansion has been system-wide with each school specializing in certain courses. Students are bussed to and from each school. Although cross-bussing may work in the case of two schools, it does become complicated, time consuming and costly for three or more schools.

Many of the local administrative units have reached the point where further consolidation of high schools is uneconomic or unwise. An expanded vocational program in each school is very expensive. Therefore, some educators contend that they are at the some point with the vocational curriculum now as they were with high schools ten years ago -- consolidation is needed to expand and to present a basic program.

The plan for consolidation usually is presented in terms of a vocational education center. This is a separate physical facility for the shops that would serve all schools in the local unit. Students would be bussed to the center from their regular high schools for shop courses of two or three periods. The vocational center concept has been gaining increased support at both the state and local level.

The State Board of Education has favored development of comprehensive high schools. These schools offer a broad program for the vocational student, and he is not set apart permanently from other students but is encouraged to intermingle in the non-shop courses. Separation tends to make the vocational student feel inferior, while complete mixing in classes would hurt the performance of all students. The comprehensive high school takes a middle path of creating opportunities for selective mixing in order to improve each student's chance to learn.

However, many superintendents thought high schools which started out to be comprehensive rarely achieved that goal, partly because of the costs of a broad vocational curriculum and a complete guidance program and partly because of academic bias. The vocational center concept is viewed as an alternative which can make the local system comprehensive without incurring the heavier costs of a school-by-school approach.

Most professionals in vocational education are of the opinion that the comprehensive high school just does not work in providing improved occupational preparation. They argue that the consistently poor location of shops, the inadequate guidance program and the academic orientation of teachers creates a separateness that can only foster inequality of educational opportunity. Some state that the only real advances in occupational preparation in this county have been brought about by separate area vocational schools.

Neither successful operation of a comprehensive high school nor establishment of secondary area vocational schools will resolve all of the difficulties besetting a small local administrative unit. To be sure, planning construction of a 1,200-1,500 student high school with program offerings in five vocational areas would qualify for money under the 1963 Act (State policy permitting) or under the Appalachian Regional Development Act. But other educational services such as guidance, curriculum development, in-service training, social and psychological workers and special classes for the retarded, handicapped, or gifted are too expensive for a small unit to obtain on its own. A combination of two or three units, however, would be able to provide these services adequately on a cost-sharing basis.

Regardless of which way the State moves in funding vocational facilities, the need for multi-unit organizations will remain obvious. These cooperative ventures offer advantages of consolidation with the flexibility of working separately with each unit, and permit program expansion on this basis.

Curriculum Issues

If we accept the fact that a reorientation of public education to the world of work is necessary, how it is to be done becomes the important question, and this involves some basic curriculum issues in vocational education.

Many educators think that vocational education is not as effective as it should be in preventing dropouts and in basic preparation for work. They argue that the cirriculum is not designed to hold the interest of the student, and often there is little promise of job opportunities at the finish.

In growth areas, the dropout situation is further complicated by the fact that the school system is working with limited facilities. Dropouts relieve what otherwise would become an impossible overcrowding. Since there is nothing new to offer the dropout, and since his presence usually as a discipline problem affects the performance of others, little effort is made at retention.

Although vocational courses help considerably in awakening student interests, most are offered in the eleventh and twelfth grades -- too late to be of great help in retaining dropouts. Most are gone prior to that time. The sequence of vocational education in the schools starts with an introduction to careers, usually at the ninth grade level, followed by more advanced courses geared toward a career choice, and finally skill training in the chosen area.

Some think that this sequence has not worked well because skill training, the area of greatest student interest, is delayed until the last stage. The same argument applies to Industrial Cooperative Training and Distributive Education where money income is as important as the work experience. However, earlier offering of specific skills might further aggravate the dropout problem since students could more easily qualify for jobs.

This gets to the question of whether the completion of requirements for a high school diploma in itself is a meaningful goal of public education, and the question is being asked more frequently. Emphasis on the problem of dropouts implies that completion of diploma requirements may be an end in itself, without consideration of what we are educating for. Yet the dropout concern has to be viewed as part of the larger issue of providing basic work preparation in the schools.

Some argue for earlier skill accumulation and probably would accept a higher dropout rate if it meant the system was performing better in work preparation. But evaluation of work preparation in the schools is complicated by two factors. One is that the student should not lose flexibility in choosing among courses of study too soon in his education, and programs offering early skill accumulation may preclude other choices. To some extent this problem is created by the three hour shop-block which, in addition to limiting physical capacity by tying up shops for half a day, leaves little time for courses leading to other options. Some educators now are calling for a new approach to the vocational curriculum, one which is built around career introduction, a general approach to occupational skills, and a good background in fundamentals.

The other factor complicating evaluation is that early skill accumulation, although it aims directly toward a job opportunity, tends to be quite specific in terms of occupational preparation. Technological change and the rapidity of job obsolescence have taught, however, that occupational flexibility is a necessity in the modern world. The implication is that preparation should be geared to a family of occupations and must include a better grounding in communication, computation, cooperation, and adaptability to change. Industry too has shown more concern that students are getting the fundamentals of a good general education rather than specific occupational preparation.

Whether the schools can retain the youth long enough to implant fundamentals without expanding specific skill accumulation is difficult to say. But one thing is certain -- the day all students are required to attend the same school the same hours and take the same kinds of courses should pass.

Another issue is whether to orient the vocational program to local job opportunities or to the interest and needs of the students. Particularly in the less populated areas where young people tend to move away, they are reluctant to participate in a program designed for local industry. Orientation to the local area also can create some difficulty by flooding the labor market with specific skills, and this may call for coordination among local units in curriculum offerings. Usually these units do not have the staff to examine area skill needs individually, but could undertake this jointly.

Expanding Occupational Education in the Community College System

The Community College System is composed of two types of institutions the Technical Institute, which offers vocational and technical education programs, and the Community College, which offers a college parallel program in addition to vocational and technical education programs.

The role of the Community College System is formalized as follows:

> "The Community College System has been established to fill an educational opportunity gap between the high schools and the four-year colleges and the university system. The filling of this gap requires open door admission of both high school graduates and of others who are eighteen years old and older but are not high school graduates. The provision of educational opportunity for this broad range of student ability and needs requires a broad range of curriculum offerings, including college level, high school level, and for some elementary level studies.
>
> The carrying out of this responsibility assigns a unique role to the institutions in the Community College System, which role is fundamentally different from the more selective role traditionally assigned to four-year colleges and universities. Because of this, for a Community College to aspire to become a four-year college would not represent normal growth, but would destroy the Community College role and replace it with an entirely different type of institution." (The Comprehensive Community College System in North Carolina, State Board of Education, Department of Community Colleges Revised September 1967)

The objectives of the Community College System are stated as:

"1. To provide expanded educational opportunities for thousands of young people and adults who would not otherwise continue their education.

2. To provide relatively inexpensive, nearby educational opportunities for high school graduates, school dropouts, and adults.

3. To provide college parallel programs, consisting of the first two years of regular college studies.

4. To provide technician programs, preparing students for jobs of this level in industry, agriculture, business, and service occupations.

5. To provide vocational programs of less than technician level, preparing students for jobs requiring different levels of ability and skill.

6. To provide programs of vocational education for employed adults who need training or re-training, or who can otherwise profit from the program.

7. To provide short courses that will meet the general adult and community service needs of the people of the community." (The Comprehensive Community College System in North Carolina,op cit)

The Community College System, made up of Community Colleges and Technical Institutes, offers a large majority of the educational opportunities below four year college available in North Carolina Appalachia. Established in 1963 to fill gaps in post-secondary education opportunities, the community college institutions, through the "open door" policy, have sucessfully extended universal education beyond the high schools. This has been of particular benefit to North Carolina Appalachia since vocational education and training possibilities in the public schools have been limited. But the full impact of these institutions in the region has not been felt as some are brand new and others still are in the planning stage.

The community college institutions, because they are open to anyone 18 years or older, have a critical role in the educational preparation of the region's workers. These institutions are involved in the backlog problem through offerings in adult basic education, occupational upgrading and vocational training. And they provide a broad range of advanced vocational and technical program opportunities for high school graduates.

How successful the community college institutions are in expanding their role of occupational preparation will determine the success of the region in turning out more skilled workers.

There are 11 community college institutions in North Carolina Appalachia, four community colleges and seven Technical Institutes. They are:

A. Community Colleges

Isothermal (Spindale -- Rutherford County)
Western Piedmont (Morganton -- Burke County)
Surry (Dobson -- Surry County)
Wilkes (Wilkesboro -- Wilkes County)

B. Technical Institutes

Tri-County (Peachtree -- Cherokee County)
Haywood (Clyde -- Haywood County)
Jackson (Webster -- Jackson County)
Asheville-Buncombe (Asheville -- Buncombe County)
Marion-McDowell (Marion -- McDowell County)
Caldwell (Lenoir -- Caldwell County)
Forsyth (Winston-Salem -- Forsyth County)

The Tri-County, Jackson, Haywood, and Marion-McDowell institutes all are extension units of the Asheville-Buncombe Institute.

Of the Community Colleges, only Surry is operating fully in new quarters. The others are housed in temporary quarters although construction is nearly completed in two cases.

Of the Technical Institutes, only Asheville-Buncombe and Forsyth can be considered as fully comprehensive. The extension units are in temporary quarters and even though Caldwell Tech is operating in new facilities, it is only a few years old and has not fully expanded its range of course offerings.

A Summary of Current Program Procedures

Because of the importance of the Community College institutions in manpower education, a survey of current program procedures was made to better understand how the operation of these institutions aids in turning out a greater number of skilled workers within the region. The survey covered three areas:

1. Enrollment procedures
2. Program operation
3. Job Placement procedures

Enrollment Procedures

Because most of the institutions are relatively new, there has not been much experience with a waiting list procedure. Rather, the problem has been to find the students. Only the two major Technical Institutes have had this experience and records have not been tabulated. One institute estimated that 600 people could not be accommodated in fall classes because of facility and staff limitations. Until all the institutions undergo several years of full operation in new quarters, records of the number of applicants will not be too significant.

Some institutions make substantial efforts to follow-up with re-direction alternatives for students when first choice programs are filled. Again, however, most have not yet had much experience in this effort, although most expect to rely heavily upon counseling procedures.

Enrollment standards depend largely upon the individual administrators since all adhere to the open-door policy. Most institutions have established entry levels for specific programs based upon minimum aptitude test scores. If the applicant cannot meet the minimum requirements for the program he is counseled into a developmental studies program, usually as part of the extension offerings, to make up deficiencies in requirements.

Because of the open-door policy no one actually is rejected from the institutions. But many applicants who received insufficient preparation in high school are unwilling to take a program of developmental studies to qualify for program entrance.

Standard tuition charges set by the Department of Community College are $42 per quarter for college parallel and $32 per quarter for technical and vocational curriculum programs. In addition, there are book charges and most institutions have nominal activity, registration, and insurance fees. Financial aid is generally available through local scholarships (a limited number) federal and State loan funds, and through arrangement of part-time work.

Most institutions conduct a publicity campaign through industry and the local news media at registration time, and make contact with the high school guidance personnel and with prospective students either by bulletins, letter, or in person. The Department of Community Colleges publishes a guidebook for high school counselors and distributes one to each guidance person in each local administrative unit in the State. The extent of personal contact varies with the staff resources of the institution, but in most instances it is confined to high school graduates. Outreach techniques rarely are used to reach dropouts.

The enrollment procedures are fairly standard for the curriculum programs and generally are conducted on campus. They are:

1. filling out applications and related forms
2. testing program
3. personal interview
4. registration

2

Most institutions emphasize personal interviews as a key aspect of the enrollment procedure, but others view it as less important. Extension enrollment often takes place over the phone or by mail, and even on site at the first class.

The groups for which enrollment opportunities seem limited are 16-18 year old dropouts, women, and the poor -- especially Negroes. The dropout problem arises because the community colleges cannot enroll them in curriculum courses until they reach 18. Enrollment of women is limited mainly by the lack of job opportunities at present in most technical and vocational, and the institutions are reluctant to educate them in areas where jobs do not now exist. The poor student from a low income environment generally cannot meet the minimum requirements of the curriculum program and is redirected through the remedial type offerings of the extension program. This is a longer route, but the feeling is that until the public schools provide an improved foundation in education, there is little else that can be done. The overwhelming need for steady income also limits sharply the participation of the poor.

Program Operation

Factors limiting course selection and content include availability of instructors, equipment, and program funds. Information used in planning includes the local labor demand, job requirements, student interest, and regional growth in job opportunities. Some institutions have active advisory committees which help organize and plan programs in specific areas.

The location and timing of courses in most institutions is still not permanent because of residence in temporary quarters. However, new buildings do imply locational consolidation at least in terms of curriculum courses and this may have some impact since course sites initially have been rather spread out. Also, as the demand for part-time studies grows, additional evening courses probably will be added to accommodate student needs.

Dormitory facilities are not provided within the Community College System, but the institutions do help students obtain accommodations. Finding an adequate number of rooms has been a problem in the small towns. Most students commute, some over fairly long distances which tends to hinder their performance in school. Commuting is especially difficult in the mountain areas during the winter months.

Scholastic standards for remaining within the curriculum programs tend to vary amoung the institutions. Some are more specific as to grade point level and attendance, while others stress mainly passable grades and continued interest of the student. A few institutions attempt a scaling down of student's program in a series of steps before complete withdrawal from the curriculum program is requested. Some institutions place the emphasis on grade-points in moving from one year to the next; others use grade-point primarily as a requirement for graduation.

Generally the dropout rate has been high, although again most institutions have not been operating long enough for a definite pattern to be established. From scattered evidence it appears that the incidence of dropouts is related to general economic conditions, becoming much higher in peak periods. One of the institutions in operation a long period of time experiences a 40-50 percent dropout rate in the two-year course and about 30 percent in the one-year courses.

There are many reasons given for dropouts other than a general relation to business conditions. These include personal factors such as motivation, income needs, and failure to succeed as well as school-related factors such as a poor academic background from public school, improper course choice, inadequate guidance and academic orientation of the curriculum. The only meaningful characteristic that can be isolated is age -- a far higher proportion of dropouts occurs among the 18 and 19 year olds than among any other age group.

All of the institutions use counseling services in an attempt to retain dropouts, although the intensiveness of the effort varies. In addition, some make a special effort to identify potential dropouts and to work with them on program modifications and schedule variations. The success of the institution's effort is largely determined by the staff resources.

Administrative problems arise in program operation primarily in course expansion. State money comes in late relative to setting up and starting a new course so advance planning is difficult. State allotments are made on the basis of past FTE (Full-Time Equivalents) rolls, so that the larger institutions have a far greater built-in expansion factor. A basic problem here is that the institution needs a program to get students, yet it must have potential students to get program approval. Some also have experienced time-lags in getting equipment for both new and ongoing courses.

Placement Procedures

Because most institutions are relatively new, setting up of placement procedures has not yet been undertaken. Ordinarily instructors have helped in getting leads and in handling industry requests. The more established institutions ordinarily have a Student Personnel Office which coordinates placement efforts. All institutions have accepted placement as a legitimate function and most have indicated that they are or expect to be working closely with the local office of the Employment Security Commission.

Follow-up studies have been initiated only in a few institutions, although others have expressed intent as graduates receive jobs and administrative staff is provided. One institution conducts a three-year follow-up of its graduates seeking information about:

1. employment relative to education
2. salary
3. suitability of curriculum to actual work performed

4. subject areas too lightly covered
5. courses too heavily emphasized
6. overall evaluation of instruction and equipment

Placement results generally have been excellent in the institutions from which information is available, running from about 80 percent up. Often it is difficult to get accurate figures in the short run because of the draft, further schooling, and job changes. Where the programs have been designed especially to meet specific local labor needs, high placement levels ordinarily are assured. However, one problem is that graduates from the two year programs sometimes had to settle for jobs at a level below that for which they were educated. From all placement efforts including those outside of the institution, employment has been close to 100 percent with about 80 to 90 percent working in jobs related to the individual's formal program.

The effort to retain graduates locally or at least in the general area differs widely among the institutions and is based largely upon how the role of the community institution is conceived. A few extend themselves to retain graduates, even to designing programs which gear specifically (though not exclusively) to this result. Some feel little responsibility in this area and seek only to communicate all possible opportunities to the student. Others try to schedule interviews with local firms first but attempt to bring in outside firms that have national reputations.

Particularly in a tight labor market such as exists now, industry "Pick-Off" of students prior to course completion tends to increase. This is inevitable, and a few institutions have developed a working relationship with these firms that encourage course completion even after full-time employment. This ordinarily involves four to six hour shifts designed to fit into the institution program and reimbursement for tuition, fees and books.

Local industry participation in the placement process has been good and is getting better. Usually this is determined by their willingness to interview prospective employees on campus, use of student files, and frequency of contact with institution personnel.

Factors Limiting Enrollment

Although many facors limit enrollment, varying with the age, type and location of the institution, the two basic problems are insufficient funds and inadequate acceptance by the community. Generally it is the well-established institutions -- the older Technical Institutes -- that experience the most severe money problems in all areas but especially in physical facilities. The Community Colleges and the recently formed Technical Institutes either have or soon will have a new physical plant, and for now are limited primarily by personnel inadequacies and by lack of student interest.

According to the State Board of Education, operating costs of the institutions are borne approximately 65 percent by the state, 15 percent by the localities and 20 percent by the student. In addition, the localities are responsible for land acquisition and building construction, although state matching funds up to $500,000 and also federal money may be available for capital improvements. The state provides equipment and library books according to a prescribed allotment formula.

Inadequate funding capacity exists primarily at the local level where the bricks and mortar effort must be initiated. The older Technical Institutes now are operating far beyond their physical capacity by using facilities more hours and by utilizing split shifts. But the point of diminishing returns in this kind of operation is approaching, and the only alternative seems to be a limitation on enrollment.

It is thought that local money also ought to be used to exceed the standard state allotment for equipment. Most persons interviewed felt that additional equipment often is needed to round out a program, and that there is little possibility of acquiring it through the regular channels of inter-institution transfers. However, MDTA equipment which is not charged to an institution, often lies idle after course completion and could be used effectively elsewhere.

Another area where insufficient funds affect enrollment capacity is personnel. Salary levels have been low, making it difficult to attract faculty in competition with business and industry as well as with the four year colleges. It also was pointed out that the budgetary allotment of teachers and of non-teaching personnel makes it difficult to expand enrollment without running into temporary staff shortages.

Local acceptance of the community college institutions is not as good as it could be, although improvement has occured. As with the high schools, both the image of factory jobs and the image of vocational education influences community acceptance and support of the programs. But because post-secondary education is voluntary and because local funding for it is substantial, favorable community status probably is even more important here than in the public schools.

The Community College System programs have not been able to fully escape the "Vo-ag" or "dumping ground" image of high school courses, particularly in the rural areas. Partly because of this, high school students do not get sufficient encouragement from either public school personnel or the community at large to go on for advanced education and training. Especially with the new institutions, enrollment seems to be limited mainly by the interest of the prospective students. However, once an institution does prove itself in terms of graduates, community acceptance and support usually is forthcoming.

Part of the image problem also results from the institution's initial quarters -- old buildings, gymnasiums, abandoned halls, and even prisons. New buildings and a campus probably have done more to upgrade the institution's status than anything else.

Although much can be said about the lack of community-wide encouragement for post-secondary vocational and technical training, the Technical Institutes and Community Colleges also could do more to spread the word. True, there are budgetary and time limitations. Still, the approach of one institution -- that it is their job not only to get into the high schools and follow up with two or three revisits, but also to get to past graduates and dropouts -- is not always carried out by all institutions. Perhaps the most difficult fact to accept about the community college program is that the need for it is not obvious to prospective students; a tremendous selling job is necessary at all levels within the community.

Other factors tending to limit enrollment, although important in specific instances, do not affect a large majority of prospective students. The registration procedure, which includes testing for placement purposes, occasionally may present a barrier. Some students balk at being redirected when a course is filled, or being asked to take special pre-admission courses in order to qualify for enrollment in a curriculum program.

A student loan fund is available for all institutions, but scholarship money generally comes from the community and in some cases it may not be sufficient.

In some cases, the location of the institution and poor roads makes daily commutation rather difficult. Centralizing curriculum and some extension offerings on campus may tend to aggravate this situation. Also, the timing of courses can present a problem but industry generally has been cooperative with release time. Swing shifts in manufacturing and seasonal work requirements of agriculture present the greatest difficulty.

The lack of acceptance of women in many occupations makes the institutions somewhat reluctant to train them unless a definite job opportunity exists and explorations in new areas have not been undertaken. The Negro's view of job training as leading only to menial tasks is allowed to go uncorrected for the most part, and programs designed to cope with the background of the poor as a group have been noticeably absent.

More generally, a tight labor market probably is the most serious of the other factors limiting enrollment. Invariably the community college institutions and local industry are in competition for the same people.

Curriculum Issues

It is a difficult task to maintain institutions of academic stature and local standing while at the same time giving more than lip service to the "open door" policy. For the Community College System, academic stature means high standards of occupational preparation, and pursuing these must not be interpreted as seeking academic excellence. During the winter quarter of 1966-67, non-high school graduates represented 15 percent of all students in the region's institutions taking the college parallel program, 10 percent of technical program enrollment and 23 percent of vocational program enrollment.

Indeed, the concern over dropouts has reached the point where offering only shop-type courses in some programs is being considered as one improvement in the job preparation role of these institutions. The way academic subjects are presented at the post-secondary level apparently has as little meaning for the student here as it did in high school. A shop-oriented approach may do violence to the concept of a liberal education, but there seems to be little choice if job preparation is indeed the goal. Furthermore, a narrower approach can be related more successfully to job flexibility by offering education in a family of occupations.

A narrow horizon at the post-secondary level would only be temporary if public school reorientation to the world of work is built around more meaningful course content in the non-shop areas. Community college efforts now are impaired by the limited education background of students and by learning blocks against certain subjects. This means that the responsibility for implanting acceptance of and grounding in fundamentals rest squarely on the public schools, and extends backward all the way to elementary education.

Another important issue, although more long-range, is how the vocational education curriculum of the community college institutions will relate to expanded vocational programs in the high schools. Part of the initial reasoning for comprehensive post-secondary institutions was that they should offer the vocational training not given in the high schools at that time. But as the high schools became more deeply involved in providing skills, the principal differences between the levels of education has turned out to be the clientele. Programs in the post-secondary institutions are geared to serving high school graduates and dropouts who have not received prior occupational preparation.

The real issue is the nature of the vocational program in the Community College System as the high schools continue to expand their own offerings. An upgraded curriculum is the most frequently stated possibility, but if the high schools go much farther in preparation, little room seems to be left for upgrading the curriculum as a practical consideration in job preparation.

Some people argue that a view of vocational education in the total context seems to make it unnecessary for the high schools to get involved with high cost shops and expensive materials. They see the proper role of the public schools as providing a good background in fundamentals and a general orientation to the worls of work -- with skill accumulation offered primarily at the post-secondary level.

A third issue is similar to the one faced by the high schools in preparing a vocational program. To what extent should the program be geared to the skill needs of local industry? The problem of youth out-migration for jobs elsewhere tends to argue for a program effort broader than local job opportunities.

There also has been some discussion about the institutions specializing in preparation for specific occupational skills to avoid costly program overlap. To the extent that this reflects area economic specialization it seems to make sense. But if the program effort involves specialization geared to job opportunities located primarily in other areas, then the community function of the community college institutions has little meaning for local industry.

Relationship With the Public Schools

There seems to be a growing void between the operation of the Community College System on the one hand, and that of the local public schools on the other. Rather than actively coming together in a coordinated approach to manpower education, each seems to be withdrawing more within its established area of operation.

Formation of the Community College System itself was designed to make clearer the distinction between the two levels of education by placing control of the post-secondary institutions outside of the local school board. One of the reasons for this approach was past experience, demonstrating that adults would not attend courses in large numbers if the institutions catered primarily to high school students. Also, age affects program design since the adult student tends to be more stable in his approach to learning and apt to advance faster through the curriculum.

There are few instances of a close working relationship between public school principals and guidance counselors, and the administrative staff of the Community College institutions. This is particularly apparent in the lack of sufficient information on post-secondary education and training programs reaching the high school student, and in the lack of joint curriculum planning efforts to improve the role of each education level in job preparation.

A greater overall commitment to improve job preparation is difficult because of the costs of putting up, equipping, and adequately staffing the physical plants at each level of education. The issue of additional money for program expansion at the Community College institutions, therefore, cannot be separated from the vocational program needs and role of the public schools.

Each draws upon the local tax base and expansion at one level is bound to limit expansion at the other level. Although it is obvious that more money is needed, the real question is how to spend the education dollar more effectively. If expansion results in a program and facility overlap, it represents scarce funds not well spent.

Chapter V. AREAS OF EMPHASIS FOR PROGRAM RECOMMENDATIONS

North Carolina has a fine institutional base in manpower education programs for building up a skilled labor force. With the exception of adequate local financial resources for program expansion, this institutional base extends into the Appalachian Counties. The establishment of four Community Colleges and seven Technical Institutes, and the commitment of the 41 local administrative units to vocational curriculum expansion, has set the ground work for a broad effort in occupational preparation. Concern therefore should be with the next steps -- how can past gains best be consolidated in order to turn out a greater number of skilled workers?

We have concluded that the manpower problem in North Carolina Appalachia -- an inadequate supply of skilled labor -- is the combined result of deficiencies in occupational preparation at the public school level, too few high school graduates pursuing post-secondary education, and enrollment limitations in Community College System. We also have pointed out that the key to the elimination of serious manpower problems is better educational preparation for work in the elementary and secondary schools. This is where the great improvement effort must come if the people of the region are truly committed to tackling the manpower problem head-on. The system of public education must be reconstructed so that it can provide meaningful learning opportunities for all youth in the years ahead.

This is a huge task and will take time. Right now the Governor's Study Commission on the Public Schools is probing the basic questions of education for the State as a whole and will offer recommendations that should be far-reaching in effect. The community concern about manpower education is at its highest point in decades and leaders are looking for guidelines in taking the next steps. The time is right to program new goals for the future.

Our approach to program recommendations is to emphasize both remedial and basic improvement (developmental) needs in public education. Even though the focus of Part I is primarily long-range and the focus of Part II is primarily short-range, our concern is with both. Recognition of the pressing manpower needs in the region to 1970, however, has dictated the development of programs which can have an early impact upon the labor market situation.

Realistically, we cannot expect things to happen immediately. Implementing new programs will require a time-consuming trial and error procedure. But we can expect enthusiastic support at the local level to take hold now and to provide the momentum for action at the earliest possible date.

Although our work is confined to North Carolina Appalachia, we hope that the program recommendations will have state-wide implications.

Remedial Programs

Assuring a sufficient number of skilled workers for the region's industries by 1970 means the development of education programs in two key areas: basic occupational preparation for dropouts and advanced occupational preparation for high school graduates. Our estimates show that there will be about 18,000 high school dropouts between 1966 and 1970, nearly half of whom must have some additional work preparation to meet occupational requirements. Our estimates also indicate a shortage of 6,200 persons for occupations requiring advanced education below the four year college level.

Public School Dropouts

Dropouts between the ages of 16 and 18 are of great concern. There are no formal job training programs, public or private, regularly available to them in North Carolina Appalachia even though dropouts constitute nearly one-half of the direct entrants into the labor force from the public schools. High schools have not offered special courses, and dropouts cannot enter the curriculum courses of the Community College System until they reach 18.

The answer most often given to this problem is to get to potential dropouts and convince them to remain in high school and graduate. But no one ever has come up with an effective way to do this. The great publicity campaign and more effective individual counseling has not been characterized by success primarily because the dropout is being asked to return to exactly the same situation that he has rejected. Until the public school curriculum can offer him something more meaningful, this approach will not reach the dropout.

Some educators think the reality of the situation is that the major effort must be made after the dropout has occurred, and that it probably has to be carried on outside the ordinary framework of the public schools. The problem here is that many are lost in the time-gap between leaving school and the next contact. However, the Community Action Agencies have pioneered in the area of "outreach", showing this to be an effective approach.

Programs offering remedial-type education and occupational preparation for dropouts are desperately needed in each community. It is likely that these programs could be carried on with the cooperation and active participation of the local schools, and without being very expensive. Public school vocational facilities are idle at times during the day and usually at night, and there ordinarily is slack time at the community college institutions.

For the programs to be successful, however, they must have some interest for the dropout. He also must be aware that they exist and that they can pay off in work and in dollars. Communicating effectively with the dropout about these programs, however, is a major stumbling block.

Business and industry, the high schools, and post-secondary institutions must become more committed to joint participation in a program for dropouts than they have been in the past. The role that local business and industry plays is particularly important because they can offer a job opportunity at the end, one of the more tangible inducements for job preparation. That role is important also in helping to devise more meaningful ways to prepare dropouts for work, and in helping to publicize the whole program effort.

> Our recommendations cover what the program objectives and components should be, how the program should be carried out, and what it will require in terms of additional facilities and staff.
>
> Our recommendations also include suggestions for a role that local industry should assume in helping to expand opportunities for advanced education, and how this can be coordinated with and make use of the resources of the public schools and community college institutions.

Encouraging Post-Secondary Enrollment -- The Problem of Information and Image

Encouraging a greater number of high school graduates and even high school dropouts to go on for advanced occupational preparation is basic to meeting the skill demands by 1970. Since the number of high school graduates taking advanced education programs will be far short of the number needed by industry, even with greater encouragement, a concerted effort will have to be made to attract employed and unemployed adults into these programs.

The fact that program capacity will be limited in the community college institutions means that local industry will have to take a more active role in advanced work preparation.

Improving the image of local industry and establishing the value of vocational and technical education also is a necessary part of turning out a greater number of skilled workers in the region. High school students are not always familiar with the nature of factory jobs, perhaps even more so in Appalachia than elsewhere because industrial growth is a recent occurrence. Interest in industrial jobs comes almost too late in the public schools to consider formal work preparation.

The value of advanced education for widening the range of job opportunities has not been put across strongly. The great public relations effort of higher education dwarfs the publicity about vocational and technical programs and is independently bolstered by the college orientation of the public schools. Few businessmen go into the schools, and even fewer guidance people are familiar with the world of work.

More information about vocational and technical education has to be developed and placed into high schools and the homes, and a much greater public commitment to the value and prestige of this kind of training is necessary. Civic groups and particularly local business and industry have not given enough public support and encouragement to advanced work preparation, and fall short in efforts to acquaint public school personnel with the nature of occupational types.

> Our recommendations are directed at the kind of continuing information effort required, to whom it should be directed, who should become involved in spreading the message, how school personnel can become more familiar with the world of work, and how the entire effort can be carried out most effectively.

Developmental Programs

The initiation of developmental programs (programs designed to bring about basic improvements) at the same time that remedial programs are getting underway is quite important. Even though the improvements likely will not take effect in the short run, the demonstration of local concern for improvement will be important both in helping to implement remedial programs and in developing a permanent framework for bringing about improvements in education.

We have identified four areas in which developmental programs should be initiated. They include:

1. Occupational information for curriculum design.
2. Establishment of multi-unit cooperatives for providing educational services.
3. Continuing examination of ways to:
    a. orient the public schools to the world of work
    b. improve articulation of programs between the secondary schools and the post-secondary institutions.

Occupational Information for Curriculum Design

Proper planning of the occupational curriculum both at the secondary and post-secondary levels is a critical part of an improved response to manpower education problems. Ordinarily, the school administrators do not have sufficient knowledge about potential job opportunities locally or for a broader economic area. This gap in information should be filled by a continuing information program which constantly updates job opportunity potential and occupational requirements for use in planning an appropriate curriculum.

The biennial budget approved by the State Board of Education has established definite limits on program and facility expansion through the school year 1968-1969. Therefore, much of the impact of job information upon curriculum design and program expansion will have to be during the next biennium. However, it may be possible to modify existing courses prior to that time, especially in the secondary schools, to better conform with the realities of the area job market.

> Our recommendations will cover the establishment of standard procedures for obtaining job requirement information necessary in curriculum design. We will suggest survey methods and techniques for developing

> estimates of local and regional occupational skill demand, suggest how they should be carried out, and how the resulting information can be used to relate program offerings to occupational skill requirements.

Establishment of Local Advisory Committees on Education

Another important area is better communication within and across levels of education, and between state and local people. Keeping communication channels open and alive is a necessary part of continuing improvement in both programs and personnel.

For the state agencies this means greater knowledge of local problems and a broader service effort to aid the local schools. For the regional universities it means a better understanding of public school needs and emphasis upon improved education of teachers and guidance personnel, because the character of local public education is shaped largely by the product of these institutions. For the public schools and the community college institutions it means more joint planning of curriculum because the task of job preparation extends over both levels of education and neither one can function independently of the other.

To achieve this kind of communication requires an organization whose mission it is to see that dialogue is meaningful and permanent. This organization must be able to comprehend all aspects of education objectively and give voice to citizen concern about education. Therefore, it should be made up largely of lay people and function in an advisory and consulting role to professional educators.

> We recommend that local advisory committees on education be established within each local development district.
>
> Our recommendations cover how the local advisory committee on education can work to assure continuing dialogue and constant flow of information and ideas between education levels, improvements in state services to local schools, and procedures for joint planning of curriculum in vocational and technical areas.

Establishment of Multi-Unit Educational Cooperatives

With needs for education facilities and services beyond the capabilities of its financial resources, the local administrative unit now is forced to seek out new ways of providing for school age youth. One possibility that has proven feasible elsewhere is the multi-unit cooperative venture.

> We recommend that the local areas examine possibilities for cooperative ventures in the provision of educational services.
>
> Our recommendations cover the types of services that could be provided, and suggest a demonstration project for setting up educational cooperatives, with special emphasis on the implementation of Project 16.

Continuing Efforts to Improve Education

A framework for continuing examination of ways to improve the system of public education is needed.

> We recommend that the local advisory committees on education incorporate examination of the public schools as a permanent function.
>
> Our recommendations suggest important concerns of these committees specifically in the areas of orienting the public schools to the world of work and improving occupational program articulation between secondary and post-secondary institutions.

Chapter VI. PROJECT 16 - A PROGRAM OF CONTINUING EDUCATION AND WORK OPPORTUNITY FOR 16 TO 18 YEAR OLD DROPOUTS

The objective of Project 16 is to fill the gap in public work preparation programs for 16 to 18 year old dropouts. This is not a program designed to counteract the problem of dropouts; that is a monumental task, and one which will involve fundamental changes in education as part of orienting the public schools to the world of work.

This is a remedial program to cope with the problem of occupational preparation for those who have left or are about to leave the public school system in North Carolina Appalachia. Project 16 is designed for dropouts, to offer them continuing education and work opportunity at the time they leave school, thereby avoiding an interruption of formal education which could become permanent.

Project 16 is a grouping of several different types of programs, each with specific objectives in occupational preparation. It is presented this way because no one program would be sufficiently flexible nor sufficiently comprehensive to encompass the wide variety of possibilities in developing an occupational preparation effort outside of the public school curriculum.

Most of the programs are conceived so that they culminate in options for the student involving work, other programs within Project 16, or reentry into the regular school curriculum. Implementing these options, however, requires articulation among the programs which will have to be worked out in the actual curriculum design.

Because Project 16 is a grouping of programs, it can be undertaken in a series of steps, or only those components most relevent to the local situation can be selected. In both concept and operational procedures, Project 16 has been made as flexible as possible to permit easy adaptation to specific circumstances.

Program Approach

The program approach is based upon the conviction that meaningful remedial and occupational preparation courses for potential dropouts cannot now be provided within the ordinary curriculum of the public schools.

For Project 16 to be effective, its main concern must be with potential dropouts. The key to the whole program is successful identification, contact, and placement of potential dropouts prior to actual withdrawal from public school. To wait until the potential dropout becomes an actual dropout before initial contact would not be satisfactory because:

1. Usually there is no timing warning -- the student is gone and, if he still is in the area, he can be reached only by personal contact at home. This is a costly and time-consuming process, and would be a far less effective way to use counseling resources.

2. The psychological advantage of offering the student something to look forward to and plan for prior to departure would be lost, and the case for continuing education thereby is made weaker.

3. The student is apt to view belated efforts to reach him as an attempt to yank or "con" him back into school and the counselor is apt to be viewed as a modern substitute for the truant officer.

Implementing a program geared to potential dropouts is difficult. It places the schools in the awkward position of trying to convince some students that if they should leave the ordinary curriculum there is a parallel program that the schools offer which may be beneficial to them. Moreover, implementation requires special counseling services to determine who the potential dropouts are and which ones are likely to benefit from the program. But the main difficulty is that emphasis on potential dropouts requires selling students on Project 16 prior to withdrawal without the program itself acting as an inducement to withdrawal -- at least not until it has proven successful.

Program Components

Project 16 has two main program components:

1. Full-time schooling -- involving a transfer from the regular program of the public schools to a specially designed remedial program for occupational preparation administered by the public schools.
2. Part-time schooling -- involving enrollment in a formal work preparation program as a condition for employment leading to guaranteed occupational status.

Full-Time Schooling

The full-time schooling component is intended for potential dropouts who would not withdraw for economic reasons and who could benefit from a modification of the institutional setting. Both the good vocational student and the poor one could react positively to a different kind of discipline, a structured remedial program involving the latest instructional aids, individual attention, and instruction designed to make learning meaningful to them.

Responsibility for administering the full-time component of Project 16 will be in the public schools, with supporting efforts coming from the community college institutions. We have not developed guidelines regarding the cooperation of the two levels of education, preferring to see this remain flexible so that it can be worked out in accordance with the particular educational needs and resources of the local area. However, joint participation would fall along a continuum of possibilities. At one end, the community college institutions would have a consulting-advisory role in relation to the public schools, sharing their accumulated experience in remedial and occupational preparation with Project 16 administrators. At the other end, the community college institutions would assume an instructional role, possibly utilizing the procedure that now exists for transfer of students from the public schools to the post-secondary institutions.

Between the two extremes is a wide variety of joint participation opportunities involving sharing of facilities, equipment, and personnel in both instruction and counseling.

As an example, where the local administrative unit has developed a broad vocational curriculum within a comprehensive high school, less reliance could be placed upon utilizing facilities and equipment in the community college system. On the other hand, where the high school vocational program is limited primarily to agriculture and home economics the community college institutions would be expected to participate more substantially in the programs.

The curriculum for the full-time schooling component should be heavily oriented toward remedial education, making up basic deficiencies in reading, communication, and computation. Most important should be a stress upon individual instruction so far as is practical -- not a group approach, because the main reason the students are there is that they were missed by the group approach to the ordinary curriculum. Course design could parallel the developmental program approach of the community college institutions including reliance upon self-instructional features of the learning labs. Other courses should focus upon pre-occupational preparation involving personal hygiene, work attitude, and career information. The provision of occupational skills also should be a part of the curriculum. Emphasis accorded to each area would depend upon the educational deficiencies and work capability of the student, and the type of program he is taking.

Project 16 should be available to those students who have minimal deficiencies in education and to those who are seriously deficient. The former would receive a substantially greater amount of direct occupational preparation; the latter would be engaged primarily in remedial work.

There are at least three possible program variations, each with different objectives, within the full-time component short-term work preparation, long-term enrollment, and summer enrollment.

Short-Term Work Preparation. The objective of this program would be to provide a crash course in work preparation for those students who have indicated an unwillingness to remain long even in Project 16. The goal would be to offer the youth sufficient preoccupational preparation so that he would at least make a better choice in job selection and be able to get what he wants. Remedial education also should be included but there will not be sufficient time for it to be very useful; therefore, concentration upon reading and communication skills probably makes the most sense.

It should be emphasized that the program runs for a fixed period, perhaps four to six weeks, with a definite goal -- that of preparation to get a job. There also ought to be a six week extension for those who might wish to remain a while longer.

The short-term program should be coordinated with other programs so that a student upon completion would have additional learning as well as work options in his next step such as: entering the long-term enrollment, entering the part-time component or even returning to school.

Long-Term Enrollment. This program would provide the student with a full range of courses in remedial education, pre-occupational preparation, and skill accumulation. The objective would be to prepare not only for securing a specific occupational goal, but to build in the educational capability for job advancement. The length of the program should roughly equal the uncompleted time in the public school curriculum for each student. It probably could be broken into four-month segments paralleling the time periods in public school, and extend over a period of time from one to three years.

In the extended phases (over one year), the program should include classes taken in the ordinary curriculum. The administrative goal would be to ultimately incorporate many features of this program as part of a standard curriculum, so that articulation is important from the start.

The program should have two aspects: preparatory (classroom instruction) and cooperative (on the job experience) -- paralleling the approach of the vocational curriculum, and with the emphasis determined by local conditions.

The program initially should be as flexible as possible and act as a channel for new ideas in occupational preparation, and as a testing ground for their demonstration. This means incorporating certain features distinguishing it from the ordinary vocational curriculum. They are:

1. Emphasis upon remedial education in preparation for the world of work
2. Reliance upon self-instructional techniques in remedial education
3. Permitting students the freedom to withdraw at any point
4. Ungraded or minimal grading in courses, even when they are in the ordinary curriculum
5. Replacement of public school regulations with the more relaxed limitations of post-secondary education
6. Flexibility in course scheduling

Summer Enrollment. Project 16 also would have a summer program emphasizing remedial education and occupational counseling. The program would serve two groups:

1. Potential dropouts who, though a long way from leaving school, are undecided about their future, and
2. Students in the Project 16 long-term enrollment who would like to re-enter the regular curriculum.

For the undecided youth, the summer enrollment would concentrate upon helping them become aware of opportunities through individual counseling, and also attempt to bring them back to their grade level through remedial education. The objective is to keep the youth in school, but if this is not possible, to guide them toward appropriate choices in the next step. The summer program also could act as a channel for enrollment in the long-term program if it were extended back to the junior high years.

For enrollees in the long-term program who wish to come back into the regular curriculum, and this probably should be encouraged whenever possible -- particularly as the curriculum offerings are improved, the summer program should be a concentrated remedial effort. The program would build upon the education base established in the long-term program and try to bring the student to a re-entrance level above where he departed.

Part-Time Schooling

The part-time schooling component is intended for situations where income is a basic factor in the decision to drop out. The principal idea is to secure the potential dropout a full-time job with the promise of advancement to a skilled occupation upon successful completion of a prescribed course of study.

The cooperative types of program in the vocational and curriculum offers part-time work to go along with full-time schooling. This program component of Project 16 would provide just the reverse to try to meet the income needs of these students.

The part-time schooling component will require the cooperation of industry. Some firms, either because of inflated occupational requirements or a desire to help counteract the dropout problem, do not hire dropouts. This policy only forces the dropout to retreat even farther from conventional job opportunities. Other firms expressly hire dropouts because of a low wage scale and do not actively encourage additional education.

Securing the cooperation of industry in Project 16, however, is not expected to be difficult. But there may be some factors such as management policies on release time and union restrictions on job promotions which would modify the operation of this component of Project 16. Other restrictions may enter when public agencies such as local government and hospitals are involved, particularly in the case of women. Consequently, there will have to be a certain amount of procedural flexibility to adapt to specific situations.

It also will be difficult to standardize the instructional part of the short-term component because this depends upon the nature of the occupation desired, the capability and educational needs of the student, and the extent and timing of release time. There should be, however, three basic program approaches within which considerable variation would be possible. These are:

1. A stretch-out of the high school program.
2. Part-time enrollment in the long-term program of Project 16.
3. Completion of a prescribed vocational course offering specific skills.

In each case, enrollment in the program would be a condition of receiving employment under Project 16.

Stretch-Out of High School. The objective of this program would be to offer those who will dropout because of serious income problems the opportunity to complete high school. Remedial instruction would not ordinarily be a part of the program because it should be limited mainly to students without deficiencies in education.

The problems in a high school stretch-out program are maintaining interest, and being able to function well in an environment of younger people. Both could be met somewhat by having the student transfer into the community college system at age eighteen, and finish his requirements there. Or possibly, the high school could run a special program either in conjuntion with the regular curriculum or as part of the long-term program of Project 16.

Part-Time Enrollment. This program would offer both remedial education and occupational skills to those who drop out primarily because of income reasons but with educational deficiencies. Completing a generally prescribed course of study in the long-term program could be the condition for securing occupational status at a specified skill level. The developmental program of the community college institutions could serve as an alternative to the Project 16 long-term program.

The program approach would parallel that of the full-time component, the objective being to provide a background in education needed both to secure a specified job and to advance in occupational status. In some cases, however, it may be more practical to limit the program objective to securing and maintaining a job at a specified skill level.

Completion of a Prescribed Vocational Course. This program would offer specific accumulation on the basis of enrollment in an approved vocational education course. Extension courses at the community college institutions would be the most widely available in the region, but courses in private trade or business schools or company education programs are alternatives.

The learning objective would be limited to the acquisition of a specified skill or skills, although a condition for program entry should be the completion of the Project 16 short-term work preparation programs. Enrollees probably will have serious educational deficiencies, but this program is designed for those who cannot or will not participate in long-term remedial education programs.

Attaining promised occupational status would be dependent upon satisfactory completion of the course, but dropping out of the program would in no way jeopardize employment status. However, advancement then would be contingent upon job performance.

Student Costs

Because Project 16 is offered as an alternative to the regular curriculum of the public schools, the responsibility for education should continue to be a public one.

If in some cases Project 16 students are enrolled in curriculum offerings of the community college institutions then theoretically, at least, they are obligated to pay tuition and fees. The fact that the program is an extension of public education, however, should carry a waiver of tuition. It seems too much to ask students to put themselves through a program when it involves going to school full time.

Student finances may become more of a problem in the part-time component because other than public institutions would become involved. It may be a workable solution to ask the student to pay his own way since he has received a full-time job. But grants or loans for continuing education are a possibility since the program is in lieu of continuing public school education. Private trade or business school tuition could be met in this way, but industry-sponsored education may raise a different problem, especially if it is given primarily to Project 16 employees. However, industry ordinarily underwrites its own education programs and possibly could do the same here.

It is unlikely that the matter of student costs would arise except in special instances. In those cases, tuition should be a public responsibility for both the full-time and part-time students until they reach eighteen.

Student Rewards

The matter of student rewards for program completion is quite important as a motivation factor in enrollment because it involves status. Appropriate rewards would minimize any social stigma attached to completion of Project 16.

The rewarding of a high school diploma, not an equivalency certificate should accompany satisfactory completion of the full-time, long-term program component. Progress in occupational preparation beyond the normal high school level can be noted either on the diploma or on a supplementary certificate. A high school diploma also would accompany completion of the stretch-out program.

The short-term program should offer a certificate of completion and there should be an appropriate award for completion of the prescribed vocational course under the part-time component.

Completion of the long-term program under the part-time component should qualify at minimum for an equivalency certificate, or if "graduates" pass the general education development test, a standard high school diploma should be given.

Staff Requirements

The operation of Project 16 is likely to require staff services, though not necessarily full-time personnel, in each of the following areas:

1. Counseling
2. Instruction
3. Administration
4. Evaluation
5. Program Development

Counseling

Counseling is the central feature of the whole program effort in Project 16 and the counselor the central figure. The counselor's responsibility will be a long-term one, extending from the time the potential dropout is identified to some time after he has secured a permanent job.

Counseling should incorporate the following responsibilities:

1. Identification of potential dropouts -- based upon an examination of school records and conversations with teachers and administrative personnel.
2. Initial selection of students -- using criteria established by the local administrative unit and again consulting teachers and administrative personnel.
3. Student contact -- involving a series of discussions with the prospective enrollee at school and in the home.
4. Enrolling the student -- involving a design of the student's participation in Project 16 tailored for him on the basis of joint discussions with the student, parents, former teachers, administrative personnel and Project 16 instructors.
5. Providing guidance -- involving individual and joint discussions as needed during the student's participation in the program.
6. Placement -- securing the student a job upon program completion.
7. Follow-up -- maintaining periodic contact with the program graduate over a period of three years or longer if continuing guidance is necessary.

The counseling role could be handled by school guidance personnel, supplemented by Employment Security Commission counselors, teachers, and principals. However, the school guidance people have more than they can handle as it is. Furthermore, they do not really have the background to deal effectively with Project 16 students and certainly not on an intermittent basis. ESC counselors, school counselors, teachers, and principals all should be available as supplemental staff, but the counseling role in Project 16 should be handled by persons with special preparation for the task.

Separate Project 16 counselors are mandatory to permit frequent individual sessions, in-school and at-home followup, and long-term involvement with the student. We recommend a minimum of one counselor for every 50 students, and a target ratio of one to 25. The whole emphasis of Project 16 must be on individual attention, since each enrollee has been missed by the group concept of teaching and guidance in the public schools. Without a strong concern for the individual, Project 16 will itself create impediments to success through carry-over of the group concept from the public schools.

Project 16 counselors could be selected from those now in public school guidance, from ESC counseling staff, from counselors and personnel people in industry, and from the teaching profession. It seems advisable to select mature people with some experience for these positions, rather than recent graduates from teacher education institutions, but care must be exercised that the persons are not "out of touch" with the public school generation. Special preparation courses seem necessary and should be given each summer to new counselors, just prior to their assignments. In-service education also will be important for discussing common problems and to advance new techniques.

Student Selection

Criteria for identification and selection of students for Project 16 are most difficult to formulate effectively. An initial framework should be worked out by the professionals giving the special preparation courses, but this undoubtedly will be modified as more experience is gained in the program.

In principle, the program should be available to those who could benefit most, and not necessarily to those who would perform best or ultimately demonstrate clearer evidence of skill accumulation. This probably would mean a higher proportion of students with severe educational deficiencies, especially in the long-term programs. But these students might leave with little or no tangible occupational skill and therefore make program results difficult to interpret.

Student selection will be somewhat more complicated in the part-time component since the prospective employee must be approved by the firm and pass eligibility requirements. This could become a sticky point if the program objectives are not carefully outlined in advance to industry and to government agencies and accepted by each. In addition, student selection must be made circumscribed here, perhaps limited only to those in need of income for family support. The allure of a full-time job instead of school will be great, and probably would attract a number of students who hadn't even considered dropping out of school until the opportunity became known.

Special Preparation

A special course designed to prepare Project 16 counselors for their work should be offered on a permanent basis. These courses should be developed and operated by the three major teacher education institutions of the region: Western Carolina University, Appalachian State University, and Winston-Salem State College. The courses should be carried on with the active participation and support of the state staff of the Department of Public Instruction and the Department of Community Colleges.

Instruction

Whether or not full-time instructors will be needed depends largely upon how the program is developed at the local level. It may be possible to utilize public school and Community College System teachers on a part-time basis. Or, if the program is carried out through a post-secondary institution, teaching assignments could be a component of the normal instructional load.

It would be ideal to build up a separate teaching staff to get closer to the realization of individual instruction, and to have the staff identify specifically with Project 16. But this undoubtedly will not be economically feasible, and if the counseling role is performed well, a separate teaching staff would not be critical.

One of the anticipated problems, however, is that of finding instructors who can fit into the Project 16 concept, are available on a part-time basis, and are willing to participate. Part of the problem would be resolved by not requiring teacher accreditation through the normal channels, but leaving it to the discretion of the local administrative units. This would permit compensation to be determined apart from accreditation, and open the door for extensive participation of people in business, industry, and government. Getting these people personally involved would help considerably in raising the stature of the program and in solidifying local commitment to resolving manpower problems.

There should be a special preparation course for new instructors in the program and it can be handled on the same basis as the course for counselors. But more important than the initial preparation is continuing in-service education. It is likely that many instructors will have had prior experience with dropouts, and the individual teaching role is not as critical as the counseling role unless some areas adopt a curriculum designed primarily for a shop environment. Keeping up with new concepts in program development is important, however, and this requires periodic in-service conferences on occupational preparation.

Administration

Administration of Project 16 at the local level should be handled by the superintendent of schools or through his office. This is recommended to enhance articulation with the regular curriculum and to underscore the primary responsibility of the public schools in Project 16.

Administration may require an additional person on the Superintendent's staff if the program were sufficiently larger and would require a separate administrator for all multi-unit programs.

In addition to the local administrator, there should be a State Supervisor of Project 16 located in the State Superintendent's office to foster articulation among divisions of the Department of Public Instruction. Staff support could be supplied initially on a part-time loan basis, but should become permanent as the program expands.

Local Administration

Local administrative responsibility would include but not be limited to the following:

1. Project design -- determining which programs should be included, how the various levels of education could participate, what the curriculum should consist of, where and when the courses should be held.
2. Project initiation -- submitting the program design to the State Supervisor of Project 16 and preparing and submitting to the State Supervisor an application for state and federal funds if needed.
3. Project implementation -- hiring counseling and instructional staff, purchasing equipment, obtaining use of facilities and working out cooperative arrangements with participating educational institutions, government agencies, private firms, and other local administrative units.

State Administration

State administrative responsibility would include but not be limited to the following:

1. Obtaining funds -- preparing and submitting an application for federal funds to operate Project 16 and to train Project 16 staff.

2. Supervising training sessions -- arranging for teacher-education institutions to hold preparation sessions and in-service conferences.

3. Program development -- preparing initial curriculum and counseling guidelines for Project 16 based upon a coordinated effort among divisions of the Department of Public Instruction and the Department of Community Colleges and establishing a continuing coordinated effort in program planning development.

4. Consultant services -- providing consultant services for Project 16 to local areas.

5. Program evaluation -- formulating and implementing procedures for continuing program evaluation at the state and at the local level.

Multi-Unit Cooperation

Project 16 presents a good opportunity for two or more local administrative units to combine for the purpose of offering a better program in each unit than could be provided on an individual basis, or possibly not provided at all. The State Plan for Vocational Education would seem to permit this.

Multi-unit sponsorship of Project 16 is advisable because it would permit a broader utilization of existing educational resources. Facilities located in one unit could be used for a program extending to other units on a cost-sharing basis where underutilization now exists. The same situation applies to professional staff, and the community college institutions could become involved in supplementing the efforts of the secondary schools on an area-wide basis.

It seems advisable, however, to set up multi-unit programs on a basis which can be extended to the provision of other services and not for Project 16 alone. We will elaborate on this point later in the report.

Community Participation

Community participation has two components:

1. Commitment to occupational preparation as a general goal of public education -- which is covered in later discussions on image and orientation of the schools to the world of work.
2. Involvement of private enterprise and government agencies in Project 16.

Public and Private Involvement

Public and private involvement in Project 16 requires:

1. The acceptance of the program and enrollees as full-time employees or as part-time trainees under the cooperative courses;
2. The establishment of positions at sub-professional or sub-occupational levels for full-time Project 16 employees prior to their completion of the program;
3. The utilization of personnel and facilities to help in program operation.

It will be important to explain fully the objectives of Project 16 to prospective employers and to seek their active cooperation as part of an agreement to participate. It should be carefully pointed out that this is an experimental program and some leeway ought to be available for certain kinds of mistakes. Participation on any other basis might not be adequate to meet the needs of program enrollees.

Probably the most significant feature of employer involvement would be the creation of permanent positions at sub-professional or sub-occupational levels which could be filled on a continuing basis by Project 16 enrollees. This ought to be an optional feature because of possible difficulties in adoption, but it should be greatly encouraged. It has been pointed out many times that the nation-wide shortage of skilled manpower has opened up a huge need for para-professional personnel.

The concept is most readily identified with the public sector in service provisions by professionals, but it could easily be extended to the private sector in relation to professionals or in relation to occupations. The occupational emphasis may be more appropriate in business since the two year technical graduate fits into at least one permanent level at subprofessional status. It should be possible to identify certain skill levels within a non-professional occupation that could be formalized as a pre-entry or lesser craft position. In some areas, this has been done for many years through the apprenticeship concept.

Industry and government also should participate through permitting utilization of staff and of facilities to supplement program operation. This is not related to their role as a prospective employer, but would extend involvement into other areas, hopefully bringing a strong commitment to support the program.

Program Funding

Funds for Project 16 will have to cover program preparation sessions carried on by the teacher-education institutions and program operation costs at the state and local levels.

Funding the special preparation sessions likely could be accomplished through a federal grant under Title I (Community Service and Continuing Education Programs) of the Higher Education Act of 1965. Approval would have to be developed and submitted to the State Board of Higher Education which administers Title I in North Carolina.

Funding program operation of Project 16 is possible initially under Part A, Section 4(a)(4) of the Vocational Education Act of 1963, which permits the use of state money for...

> "Vocational education for persons who have academic, socioeconomic, or other handicaps that prevent them from succeeding in the regular vocational education program."

Project 16 likely would have to be proposed as an amendment to the State Plan for Vocational Education to qualify for funds. Federal funds, however, would not be sufficient to handle a large scale program effort and this would have to be financed by the State. We recommend that federal funds be used to initiate the State operation and for a demonstration program at the local level.

Program Limitations

The problem of developing programs for disinterested and disadvantaged youth who will not respond to courses given to vocational students is a monumental one. We cannot hope to resolve immediately what others have been struggling with for years. But we can construct an educational opportunity where none was formerly available, knowing full well that it may not be relevant even for a majority of those we seek to interest. Our objective therefore, is to establish the formal program and procedures, using all resources that are available, and accept for now the limitations of existing concepts and methods in reaching the dropouts.

As programs and instructional techniques improve, we would expect significantly better results from Project 16.

A procedure which may prove valuable in the early stages of Project 16, is to extend the programs to include potential dropouts below the legal age who, in effect, are just being carried on the rolls. Also, it may be possible to couple part-time jobs with the full-time component in areas where the cooperative program is not operating.

The Next Steps

In developing Project 16, we held a series of meetings with representatives from each of the State departments that would become involved in the programs. The discussions proved extremely valuable in shaping the final approach and content of Project 16.

At a concluding meeting, both the Department of Public Instruction and the Department of Community Colleges made a commitment to participate in the undertaking of Project 16.

The initial role of the Department of Public Instruction will be to help design a demonstration program for Project 16 and to develop procedures for state-wide extension based upon a collaborative effort of the Division of Vocational Education and the Division of General Education. The Department of Community Colleges will participate as needed by offering aid in program design based upon experience of its institutions.

The demonstration program is planned to cover all administrative units within a selected local development district. The objective is to initiate and evaluate the operation of Project 16 as a first step in extending this program to other areas of the region, and to the State as a whole.

Chapter VII. FILLING THE MOTIVATION GAP -- IMPROVING THE IMAGE OF INDUSTRY AND OF OCCUPATIONAL EDUCATION

We recommend a strong public relations program to improve the image of industry and of occupational education. The primary objective is to provide the motivational thrust for increasing enrollment in occupational preparation programs by raising their status in the community. Unless the program is designed in this manner -- to reach youth motivation by improving the status of work and work preparation that he may aspire to -- the results largely will be ineffectual.

A massive public relations effort is needed in two areas:

1. To provide an accurate understanding of the environment of modern industry, and particularly an understanding of how traditional industry in North Carolint Appalachia has modernized.
2. To continually stress the fact that there is excitement and rewards in non-professional jobs in industry and government, and that preparing for them is interesting and challenging.

Occupations and occupational training must be sold to the public -- this is an unmistakable fact. There is a huge information gap; people do not know what kinds of occupations continually need to be filled, what the work involves, what they pay, and how to prepare for them.

For maximum effect there should be a variety of messages and full use of all appropriate media, but the theme of excitement and rewards should be constant. The public relations effort should be a continuing one, not a one-shot blast nor a series of intermittent bursts, because this is an educational process attacking deep-rooted mis-conceptions about work and about work preparation other than college.

Ideally, the information campaign for a better image would be carried out simultaneously at the federal, the state and the local level. But this may not happen soon because of attention to other problems and lack of funds. Consequently, the greatest possible public impact will have to come out of whatever local effort is undertaken. Although our recommendations will be limited primarily to efforts below the state level, possibilities of increased support from state agencies and industry associations should be explored.

The most important part of the total public relations effort will be coordination at the local level -- in this case, the local development district. Coordination is needed for direction, to determine specifically what is to be done, how, by whom and in what sequence. Otherwise effectiveness probably will be lost in a jumble of half-hearted, independent communication with the public.

The coordination function should be placed in an organization which has continuing responsibility to review education programs at the district level. The ideal place would be the advisory committee on education to the local development districts or a committee with a similar function. But alternative organizational forms could be effective so long as they are representative of education, industry, and the community at large.

The Information Effort

The information effort must be directed specifically at the following groups:

1. Youth in the public schools
2. Dropouts
3. Public school personnel
4. Parents of school-age youth
5. Community leaders

Adequate information about the nature of occupational education and about the nature of the industrial environment does not reach any one of these groups. As important as the content of the information itself, and in some cases probably more important, is the medium through which the information message is delivered.

Until quite recently, there was little concern about how to get the message across, assuming that with appropriate content, the information alone would be sufficient. This is mistaken. A phrase taken from a wholly different context is applicable here -- "the media is the message". The specific medium through which the message is presented must be appropriate to the people being reached.

Much of the current information effort represents professionals talking to other professionals. While this is important, professionals are not the only group which must be reached. The publications and the media appropriate for reaching professionals probably are most inappropriate for communication with other groups.

A related point is the context of the message. A professional educator imploring parents to send their children into occupational education probably will be self-defeating in that he himself casts an image of academic education. Better use must be made of people who are more appropriate for communication to specific groups.

Another point is that many of the groups which should be reached are not nearly as impressed by the written word as by something they can feel, or touch, or hear. This probably implies a much more direct form of communication through exhibits, in-plant tours, industrial expositions and the like which demonstrate three-dimensionally what industry and work are like.

Youth in the Public Schools

Communicating effectively with the youth involves two things: reaching them on their own terms and reaching people who influence them. According to the recent study of North Carolina high schools by Dr. Lawrence Drabick, 63 percent of the students surveyed about occupational choice believed that it was their own decision. This indicates the importance of reaching the youth directly and not relying solely upon those presumed to be influential.

From past attempts at trying to reach the youth directly, a few things seem evident. First, communicating to a large group does not leave a lasting impression on very many students. Second, talking probably is of marginal value unless the students become involved in a discussion. Third, selling industry and vocational education more often than not is done by the wrong people -- executives, junior executive or professional types, all of whom presumably have gone to college in preparation for their jobs. Fourth, youth are inquisitive and like to see, hear and feel things -- to discover on their own rather than to be told.

How can a more effective job of reaching youth be carried out? An important step is to ask them by organizing an advisory group from the vocational programs in the high schools to help plan and help carry out an information campaign in each district. This can be done as an adjunct to existing organizations, giving representation to each one. Each of the five vocational program areas sponsor youth organizations in schools where vocational programs have been approved. The organizations are: Future Farmers of America, Vocational Industrial Clubs of America, Future Homemakers of America, Distributive Education Clubs of America, and Future Business Leaders of America.

This lets youth feel not only that they are shaping their own individual careers but that they are important in helping others arrive at decisions. Youth-to-youth communication seems to be far more effective today than adult-to-youth communication.

Setting up a youth advisory group would be done most effectively in conjunction with the active support of the local schools and the advisors to the existing organizations. Each high school with a vocational advisory group could nominate one student as a representative to the district youth advisory committee. This committee could work in conjunction with the adult group, making joint recommendations for an information program. The individual representatives could then become responsible for scheduling activities for their schools.

Using the youth-oriented media to a far greater extent is also important. This means primarily radio and primarily country and rock-n-roll stations, with the message geared to the vernacular in vogue, and put across not by a business executive but by a disc-jockey and by other youth.

Discussions with industry people are important, but will be effective only in small groups where interchange can take place and probably in the shop. It seems essential to have young workers present and perhaps include some demonstrations on shop machinery or films of industrial life and occupational tasks.

In-plant tours, again in small groups, are a necessary follow-up and, although ordinary work should not be disrupted, firms might help considerably by getting workers to talk about what they are doing. It is important to get the students to relate to the men more than with their eyes alone.

Nothing can substitute for in-plant experience on how to work. Possibilities for greater flexibility in offering part-time and summer jobs and even conducting special education sessions as part of the advisory curriculum should be explored.

In these tasks, the local development district acting either through the chairman of the advisory committee or through the field coordinator, should take the initiative by contacting the schools, the communications media, and local industry.

Most of the recommendations for reaching those influential in the youth's decisions will be covered in other chapters. The one point that is significant to bring out here is that the value of individual career talks cannot be overestimated. This of course places the burden upon guidance personnel, already very much undermanned. Until an increase and an improvement in vocational guidance occurs, it may be possible to use the local representative to the youth advisory committee in conjunction with vocational teachers as counseling aides. Or, as an alternative, a counseling aide group could be established in each high school, led by the local representative and using a vocational teacher as a faculty advisor. Coordination and scheduling of pupil conferences, speakers, group trips, and training sessions could be handled through this group.

Communicating effectively with youth seems to require that they become involved in the planning process and that they are permitted to carry out a major share of the communication themselves under minimum adult supervision.

A related problem in communication is the poor environment in which vocational education programs often are conducted. Mr. A. G. Bullard, State Director of Vocational Education has pointed out that,

> "Too many programs are still housed in unattractive basements, abandoned school buildings, and temporary structures; equipment is inadequate and obsolete; teaching materials are limited and out-of-date."

Student efforts to improve the vocational shop environment as much as possible should be undertaken. This could be as simple as "dressing up" the program by using white coats or smocks in the shops and keeping instructional areas neat and clean, and brightly painted.

A point which also should be made continually as part of the information effort is the "white-collar" classification of many occupations. Formerly, the distinction between white-collar and blue-collar jobs was related more directly to college as opposed to non-college preparation. With rapid technological change in our industrial environment this no longer applies since vocational and technical education led to a great many "white-collar" jobs.

Dropouts

The overall public relations effort in the district will have some impact on dropouts, but it will not be a major factor. Probably the most effective way to communicate with dropouts is through the outreach technique, which requires special staff and community volunteers. This has been carried out most successfully by Community Action Programs.

The main thrust in this area should be for the district committees to help that agency get a manpower program underway, if it has not already done so, and provide coordination and contact services for the CAP personnel with committee efforts.

The major concerns of the advisory committee with respect to dropouts should be confined to Project 16 students and to district-wide coordination of curriculum design and course content in work preparation. The latter is covered in greater detail further on. The CAP programs represent an established base for dealing with long-term dropouts, and the local committees therefore should best spend their time in areas where no ongoing programs exists.

Public School Personnel

Communication with public school people is complicated by the fact that teacher-training institutions have been critical in formulating at least the initial outlook. Here is where the message ought to begin.

But the problem is deeper than just communication. For public school personnel, particularly guidance counselors, to really become effective with the non-college bound youth, they must understand industry as well as accept the value of work preparation.

Familiarity with the inside of industry, with the kind of job openings available, and with the educational preparation necessary is critical for sound counseling and a good idea generally for most public school personnel. However, it is unlikely that these people can acquire an understanding of industry through the conventional media, nor would large group communications in this case seem to be effective.

Familiarization with industry and particularly with new kinds of jobs should be the principal focus of the communications effort -- to provide the base for a better approach to informing and guiding non-college bound youth into work preparation. But additional stress on the value of work preparation and the responsibility of the public schools to provide opportunities for all students is very important. Also, faculty from the teacher-training institutions should be involved, interacting with both employers and school people.

The Department of Public Instruction conducts in-service training sessions during the summer months, but capacity is limited. A continuing and more localized effort is needed to reach a substantial number of public school personnel. Two kinds of information sessions should be held on a regular basis, one by industry, the other by the community college institutions.

The industry programs should involve discussions not only with executives but also with workers. The program should be a series of sessions including a broad range of manufacturing and non-manufacturing economic activity, and covering the nature of the industry, types of occupations, and educational requirements of occupations.

The community college program should involve sessions with faculty administrative personnel and students. The sessions should cover the nature of work preparation for specific occupational types, the requirements in non-shop courses, and the public school courses needed as prerequisites.

Communication of the value of work preparation and the public school responsibility should be part of the program effort. These sessions ought to be handled by school administrators and by administrators in teacher-training institutions.

The real difficulty will come in trying to implement all of the sessions as part of a coordinated program effort to communicate with public school personnel. This involves centralizing responsibility for assuring participation, organizing the program, and scheduling the sessions. The entire effort would not be effective otherwise. Again, the district-wide role of the local advisory committee on education makes it a logical focus for program responsibility. Their efforts should be aided by appropriate divisions of the Department of Public Instruction.

Parents of School-Age Youth

This group undoubtedly will be the most difficult to reach effectively, yet it is most important that parents be involved in the process because they represent probably the greatest single barrier to a child's participation in work-oriented education. There is a monumental information gap to be filled here.

There are at least five avenues of communication to the parent which can be explored:

1. Through youth initiated by the school
2. Through the school directly
3. Through the place of employment
4. Through communications media
5. Through other parents

It is likely that all would have some impact, but one probably would turn out to be most effective in each case.

Communication through youth can take two forms. One is the repetition of ideas conveyed at school in the home, and the other is direct parent-child involvement in an organized discussion, lecture, or tour. The theme would be to reach the parents through awakening youth interest and enthusiasm for vocational and technical education.

Communication directly through the school probably should be channeled into two areas: school personnel, and re-vitalized PTA groups committed to better occupational preparation. Increased parent contact directly with teachers, counselors and administrators should be expanded, and joint parent-child counseling sessions should be implemented. Greater visitation privileges, particularly in shop courses, seems necessary.

The role of the employer is difficult to determine as a practical matter but could involve two areas. One is release time for parents to attend counseling sessions and also to make visits during school hours -- thereby getting the father (whose influence upon vocational choice is negligible according to Dr. Drabick) back into an important role. The other is greater use of posters in the plant, special messages in pay envelopes, and talks by school people or company executives on company time. None of this is intended to amount to very much in terms of non-productive time and the payoff for the community at large may be great.

Promoting an active campaign via communications media without state government or industrial association support in terms of content may be difficult. On its own, a district group could arrange for spot announcements over radio, television and in newspapers. But a professionally prepared series of programs or announcements would be more apt to reach home. Still, the real question is whether this impersonal type of communication would have anything more than a marginal impact. With sufficient repetition, however, it may provide a conscious or subconscious background identification upon which personal contact can build.

One technique that has not often been exploited is to organize counseling or advisory groups of parents to communicate with other parents about vocational preparation. These could be coordinated through the CAP programs as a variation of the outreach technique, or could be run through PTA groups which show interest. Organization and coordination at the local level would be far more effective here than a district-wide effort.

Community Leaders

The approach to community leaders undoubtedly would work best in conjunction with active support by the state. But the local areas could do it unaided through an active advisory committee. An effective approach would be to schedule a series of meetings between the committee members and local leaders, covering as many communities as possible within the district. The purpose of the meetings would be to explain the need for an improved work preparation curriculum in the public schools and a more enlightened image of industry. The intent would be for these leaders, in turn, to act individually and as a group to bring about a more favorable image of industry and of occupational preparation.

One area in which community leaders can be very effective is to point out to employers that how they view graduates from occupational preparation programs and how they view non-college workers is an important factor in determining occupational status.

Generally, the image of the two-year program graduate held by industry is good. There is a problem, however, with respect to the image of the one year post-secondary student and also those taking vocational education in high school, especially among the building and metal-working trades.

The image is reflected in standard entry level wages even after completion of an education program. It has been difficult to sell firms on the idea that program completion is worth a higher entry level wage. Until this can be counteracted in some way, many of the youth will pass-up vocational education, particularly at the post-secondary level. Community leaders can work with business and with educators to help improve this situation.

The post-secondary image difference between one and two-year programs is reflected also by on-campus interviews with prospective employers. These are quite helpful in contributing to the rising stature of occupational education. Now, on-campus interviews are held almost exclusively for the two-year student. The one-year student, the man who works with his hands, must make his own contacts. Again community leaders can play an important role in emphasizing the value of on-campus interviews with both post-secondary and secondary schools.

Another area where community leaders can be of great help is to get employers, both private and public, to do a much better job of recognizing the contribution not only of the technician, but of the man who works with his hands. It seems to be still a "backdoor" situation with respect to the entry and exit of this person, particularly from an industrial environment. Until he is accorded more status, the image of this position will continue to tarnish the image of occupational education.

An Appalachian Skill Fair

As a focal point for proper motivation and for a change in the image of both industry and vocational preparation, we recommend sponsoring an Annual Skill Fair within the 29-county Appalachian Region. The intent is to have a two or three-day exhibit of occupations and occupational preparation techniques involving industry, government, the public schools, and the community college institutions. It would be a micro-version of a World's Fair, but with emphasis upon jobs and educational preparation as a means of improving the image of both and of getting youth interested.

The concept can be presented more fully by exploring each of the following components:

1. Objectives
2. Organization
3. Financing

Objectives

The Skill Fair has three objectives:

1. To provide information about occupations not requiring a college education.
2. To provide information about educational preparation for these occupations and where it can be obtained.
3. To create interest in industrial occupations by demonstrating that they too can be rewarding and exciting.

Organization

The Skill Fair is aimed at attracting both parents and youth, and for it to succeed, sufficient advance interest must be created through both content and publicity.

As an initial approach to content, a combination of animated exhibits, operational displays, operator-manned equipment, information centers, and contests probably is required. There has to be an opportunity for greater involvement in what is going on than simply watching inanimate exhibits, and an opportunity to discuss occupational possibilities and educational requirements. Beyond this, contests of excellence in craftsmanship or machine operation would create additional interest and help identify occupations with skill achievement.

The Skill Fair should be run as part of a large annual attraction such as the Dixie Classic in Winston-Salem, thereby guaranteeing broad exposure.

Operation of the Skill Fair has to be put together in detail, coordinated and publicized by persons experienced in this kind of activity. It is too important to be done otherwise. These could be people from state trade associations, state agencies such as the Department of Conservation and Development and the Department of Labor, or persons in some of the region's industries with prior experience in handling expositions. There should be, however, a steering committee selected from those industries, agencies, and institutions in the region which would participate. Participation would involve the contribution of displays and the people to run them.

The location of the Skill Fair is important both in terms of attracting a large number of people and getting those from more remote areas to attend. Asheville probably is the most central and accessible area within the 29-county region. Consideration also should be given to the use of school busses to bring groups of families in from more remote areas.

Timing would be partly dependent upon whether the Skill Fair is run independently or in connection with another function. It could be run during the tourist season, but for maximum local benefit that should be avoided. In mid to late spring when students are concerned about their next step seems to be the most opportune time. This may have additional value in exposing the wealth of local job opportunities to those about to graduate from high school.

Financing

It is not expected that the Skill Fair will be a costly undertaking. The major expense items would be administration, site, and publicity although the major input would be time and the displays contributed and operated by participating organizations, agencies, and institutions. It is possible that some of the services involved in the expense items could be contributed.

Admission charges are not in keeping with the public importance of the Skill Fair even if run in conjunction with another event, and are not considered as an alternative to cover costs. Contributions to cover expenses could be solicited locally, but many of the potential contributors already will be committed to a donation of time. State funding is likely to prove difficult but can be explored both through agencies or by a legislative authorization.

Chapter VIII. OCCUPATIONAL INFORMATION FOR CURRICULUM DESIGN IN VOCATIONAL EDUCATION

Occupational information for curriculum design should cover two areas: program mix and course content. Program mix refers to the enrollment capacity and types of occupational courses within the technical and vocational programs of the community college institutions, and within the vocational education program of the public schools. Course content refers to the subject matter, and to the instructional and shop emphasis of the individual courses.

Occupational information should indicate the kinds of job opportunities likely to exist as of a target date in the future as a guide for the selection of specific occupational courses within a program. Occupational information also should indicate the educational or skill requirements of these job opportunities and the personal characteristics desired by firms in their employees as a guide for course content.

Our recommendations cover these areas:

1. Information needs
2. Procedures for carrying out the survey design
3. Curriculum design implications of study findings.

Information Needs and Survey Design

The conceptual framework for occupational information should be demand and supply analysis on a local development district basis, or as close to it as possible. This is to focus attention on possible worker shortages in the local labor market area. At the same time, however, the growth and changing character of occupations must be considered over a broader economic region such as North Carolina Appalachia, the Appalachian and Piedmont sections of southeastern states, or even the entire southeast.

Demand Analysis

The objective of district-wide analysis is to develop a profile of additional worker needs by industry and by occupation, covering both new jobs and replacements. This should be done on an annual basis, looking at detailed needs for the next year and more generalized needs for a five year period. The broader regional analysis could be done also on a five year basis, but updated every two years. An important component of the analysis is to consider new kinds of occupations, particularly at the sub-professional level and particularly within the public services.

The timing of demand should allow sufficient lead time for the educational institutions to make curriculum modifications in the short run and major adjustments within three years. Recommendations concerning flexibility of response to changing needs will be covered below.

The problem in demand analysis is to get the kind of information that can be related to work supply information. This is important for determining potential labor shortages. At the same time, the information must have relevance for curriculum planning. The most useful information seems to be required levels of educational attainment by occupational categories, which worked out well in our analysis of the 29-county region. Labor demand, therefore, would be developed from questionnaires concerning educational requirements of occupations for each industry, including all non-manufacturing activity.

The number of additional jobs anticipated in the district should be based upon growth estimates made by existing local firms, supplemented by forecasts of likely new development. The local survey input is essential because existing firms will account for a large part of the job gain, and the survey should cover a sizeable portion of employment. Replacement demand will have to be added in to get total worker demand and it should come from existing [illegible] but it will have to be adjusted downward to eliminate ordinary worker turnover that does not reflect permanent withdrawal from the labor force. Occupational requirements by industry related to total worker demand will give a profile of total worker need by level of education.

The term local firms means all kinds of employers, whether public or private, industrial or agricultural. Bringing in government, however, introduces a new factor into demand analysis. This is the great need for para-professional people in health, education, welfare, community action, etc., which may not be explicit, but becomes effective when the people are available. Demand analysis must include some allowance for this need, or try to dimension it more explicitly.

Regional employment projections probably will be available from a number of sources including the State Employment Security Commission, the Bureau of the Census, and the National Planning Association. These should be adopted in lieu of developing a new set of numbers. The latest figures on existing employment also are available in excellent detail from the Employment Security Commission.

An overview of program relevance can be obtained by using a method developed by the Advisory Committee on Education to the Appalachian Regional Commission. This method relates employment trends, occupational titles and curriculum coverage, and is useful in providing an overview of how well curriculum programs are geared to projected occupational growth needs in broad economic regions.

Supply Analysis

The supply analysis, to be consistent with demand categories, must be built around educational attainment levels. Drawing information from the records of the public school system the analysis should estimate:

1. High school dropouts (using past survival rates, especially from ninth grade to graduation).
2. High school graduates (as a residual).
3. The distribution of high school graduates (using information from the follow-up surveys) among:
   a. four year college
   b. advanced education below college
   c. military
   d. work
   e. other
4. Enrollment in and graduation from (using Community College institutions and other data):
   a. one year vocational programs
   b. two year technical programs
   c. two year college programs (public and private)
5. Returnees from:
   a. the military
   b. college (four years)
   c. postgraduate education
   d. advanced education below college

On the basis of relating supply and demand figures, it will be possible to develop estimates of labor shortages by industry, type of occupation, and educational level for each local development district.

Supply analysis for a broader region is not recommended principally because of the difficulty of getting information and the greater influence of migration patterns on the labor market. However, some estimates might be made of what the labor situation is likely to be for specific occupations rather than simply relying upon demand analysis.

Survey Design

The strongly recommended approach for getting information is through local surveys, and the response invariably is better if the survey is conducted by local people. Because of the expertise required in analysis of the information, the survey should be administered by professionals or by people prepared for the tasks. It also would be valuable if the same group maintained a continuing relationship with the annual surveys.

These reasons for local information gathering and analysis would suggest that technical assistance be given by the field offices of a state agency -- the most ideal being the local labor market analysis offices of the Employment Security Commission. In this way the survey task would be closely related to the interests of the field offices and would offer excellent feedback possibilities to the Bureau of Research at the State level. We recommend that the Bureau of Research conduct the actual analysis of local surveys, feeding the information back to local areas, and also conduct the broader regional analysis. The coordinating and information gathering responsibility should be centered in the local development district. Field offices of the Department of Conservation and Development would be helpful in determining future industry possibilities.

It is recommended that the survey attempt to obtain information from all employers of over 50 people, and try to get a 15-20 percent sample from those firms employing less than 50. The information should be sought from each "one-digit" SIC classification (including government and agriculture) and from each "two-digit" manufacturing SIC classification.

The technical Appendix contains suggested forms for carrying out the survey.

Curriculum Design Implications of Study Findings

Information developed as a result of our study has some definite implications with regard to the vocational education curriculum.

Vocational Curriculum in the High Schools

An analysis of the enrollment data for 36 of the 41 administrative units for 1970-71 shows that 20.8 percent of total enrollment in vocational education courses is expected to be in Agriculture and 31.7 percent in Home Economics, most of which will not be occupationally oriented. This sums to 52.5 percent compared with a total of 35.8 percent for the three programs geared toward non-farm occupations -- Distributive Education, Vocational Office Education and Trades and Industries. School estimates of enrollment in 1970-71 compared to 1966-67 show a drop only of 17.9 percent for Agriculture and Home Economics and a gain of just 14.8 percent for the other three occupational programs.

This information is summarized in the following table:

Table 1. ENROLLMENT IN FEDERALLY AIDED PUBLIC SCHOOL VOCATIONAL EDUCATION COURSES IN THE NORTH CAROLINA APPALACHIAN REGION

	Number		Distribution	
Courses	1966-67	1970-71	1966-67	1970-71
Agriculture	8,444	7,700	28.0%	20.8%
Home Economics	12,786	11,730	42.4	31.6
Distributive Education	2,002	2,764	6.6	7.5
Vocational Office Education	344	2,395	1.1	6.5
Trades and Industries	4,009	7,892	13.3	21.3
Introduction to Vocations	2,606	4,565	8.6	12.3
TOTAL	30,191	37,046	100.0%	100.0%

Source: 1970-71 figures are based upon information supplied to the Division of Vocational Education by 36 of the 41 local administrative units in the region. 1966-67 figures are from the Division's publication -- Vocational Education Student Enrollment.

Employment estimates in the region indicate that agriculture actually will decline by 1,900 jobs and fall from 8.[illegible] percent to 6.9 percent of total employment. Non-agricultural employment, on the other hand, will increase by 55,400 and rise from 78.9 percent to 80.8 percent of the total labor force. Comparing vocational education enrollment with jobs in 1970 we find that the 20.8 percent enrollment in agriculture will be geared toward 6.9 percent of the jobs,and the 35.3 percent enrollment within the three programs other than Home Economics is geared toward 80.8 percent of the jobs. The

SIC category for agriculture includes all agricultural operations, but does not include food processing or wholesaling and retailing of farm products which are included under their respective categories.

Table 2. EMPLOYMENT TRENDS IN THE NORTH CAROLINA APPALACHIAN REGION, PAST AND FUTURE LEVELS, 1966 AND 1970

	Total Employment			
	Number		Distribution	
	1966	1970	1966	1970
Goods Producing:				
Manufacturing	157,630	182,220	40.2%	40.4%
Construction	13,450	17,340	3.4	3.8
Subtotal	(171,080)	(199,560)	(43.6%)	(44.2%)
Services Producing:				
Transportation, Communications, and Public Utilities	15,290	17,650	3.9%	3.9%
Trade	46,380	55,540	11.9	12.2
Finance, Insurance, Real Estate	7,690	9,430	1.9	2.0
Services	30,260	37,030	7.7	8.2
Government	37,710	44,590	9.6	9.8
Other 1/	1,480	1,480	.3	.5
Subtotal	(138,810)	(165,720)	(35.3%)	(36.6%)
Total Non-agricultural	309,890	365,280	78.9%	80.8%
Other:				
Agriculture	33,300	31,400	8.5%	6.9%
Self-employed, Domestics	49,240	55,050	12.6	12.3
Subtotal	(82,540)	(86,450)	(21.1%)	(19.2%)
Total Employment	392,430	451,730	100.0%	100.0%

1/ Includes mining and miscellaneous services

Source: North Carolina Employment Security Commission, and 1970 forecasts by Hammer, Greene, Siler Associates.

Comparing the increases in enrollment with anticipated spending increases for equipment, Agriculture and Home Economics together account for 8.2 percent of the gain in enrollment and 19.6 percent of the increase in spending. The remaining courses, with the large proportion of the enrollment gain, will get only 80.4 percent of the money. The cost of equipment per additional student in Agriculture is $2,597, about five times the per student cost in Trades and Industries. The data are shown in Table 3 on the following page.

The curriculum implications of the economic data are clear: the public schools must undertake a far greater effort in expanding enrollment capacity in the relevant vocational courses than is now planned. This, of course, means more money. But it also means something else if the money is to be spent effectively -- a reallocation of vocational funds away from Agriculture and Home Economics into the programs which are much more relevant to emerging job opportunities, namely: Introduction to Vocations, Trades and Industries, Distributive Education and Vocational Office Education.

As implied in Table 3, the per pupil costs of additional investment in Agriculture and Home Economics are far too high. Vocational education money spent on other programs would be more effective in terms of increasing both enrollment capacity and the quality of education in courses relevant for occupational preparation.

Table 3. ESTIMATED ENROLLMENT AND EQUIPMENT SPENDING INCREASES IN VOCATIONAL EDUCATION, 1966-1967 TO 1970-1971, NORTH CAROLINA APPALACHIAN REGION

Courses	Numerical Increase		Percentage of Increase		Equipment Cost Per Additional Student (Dollars)
	Enrollment[1/]	Spending[2/] (000's)	Enrollment	Spending	
Agriculture	106	$ 275.2	1.9%	9.4%	$2,597
Home Economics	351	307.0	6.3	10.6	$ 875
Distributive Education	997	138.8	17.9	4.7	$ 139
Vocational Office Education	1,081	561.7	19.4	19.4	$ 520
Trades and Industries	3,044	1,620.4	54.5	55.9	$ 532
TOTAL	5,579	2,903.1	100.0%	100.0%	

1/ Excludes Introduction to Vocation for which few expenses have been forecast

2/ Includes all 41 local administrative units for 1967-68 and all but two for the remaining years.

Source: Enrollment is based upon information from the previous table, and spending forecasts are based upon requests of local plans in the region's administrative units.

Re-Orientation of the Vocational Curriculum. Federal legislation on grants to states for vocational education does not present a barrier to reallocation of program funds as part of a re-orientation of the vocational curriculum in the high schools. Part A, Section 10(a) of the Vocational Education Act of 1963 permits the states to lump funds available under that act with funds from prior acts: the Smith-Hughes Act and the George-Barden Act; and to allocate all funds among programs according to state determination of program emphasis. This has been adopted as a matter of state policy but flexibility in support of vocational education programs has not increased partly because of the line-item budgeting procedures at the legislative level and teacher allocation procedures at the state administrative level.

The real problems do not seem to be acceptance of the need for curriculum changes either at the state or local level. Expansion of programs other than Agriculture and Home Economics is being actively encouraged by the Division of Vocational Education and planned for at the local level. Still, the idea of reallocating funds away from these courses or even limiting the flow of funds to local areas until a formal reallocation plan is set up has not received sufficient attention.

But the real problems revolve around implementation -- how the re-orientation is to be accomplished at the local level. The main difficulties are:

1. Teachers -- getting qualified teachers has been a considerable problem with existing programs. Expanding the relevant occupational programs depends upon the teacher for success and getting established teachers to accept a new approach to this subject has been difficult, even within agriculture. Yet the vocational agriculture teachers, at least initially, will have to carry the course load in other programs -- especially in the smaller local units.

   The line-item budgeting procedure hinders State administrative flexibility because it impedes a transfer of funds among programs. The allocation of teachers to administrative units has a similar effect upon flexibility at the local level.

2. Facilities -- most of the units which have predominantly Agriculture or Home Economics courses do not have facilities for Trades and Industries or Vocational Office Education. Acquiring facilities is complicated by both state and federal regulations. State policy restricts 1963 Act funds designated for construction to the Community College Sustem. Federal regulations prohibit aid unless the vocational curriculum includes five programs and this usually requires a high school of 1,200 or more students. Appalachian Development Act money has been used to aid construction of comprehensive high schools within which broad vocational programs have been planned. But this has not affected more than a handful of local administrative units. Without facilities, the local units are even more limited in obtaining funds.

3. Community Resistance to Change -- this is expressed by the desire to retain Agriculture and also Home Economics as the mainstays of the vocational curriculum. Where agriculture is predominant or once was so, there is continuing resistance to lessening the importance of vocational preparation in this field, and even to modernizing the agricultural curriculum in the direction of courses other than production of field crops.

The problem of teachers probably is the most difficult to resolve. As pointed out above, success in re-orientation of agriculture programs even aided by new curriculum materials and in-service education has had only limited success. Yet since getting new or additional teachers on a large scale is not likely, efforts must be continued in preparing new curriculum materials and expanding in-service education.

The latter could rely much more upon the use of local resources and talent than it has in the past. The community college institutions and local industry could, with State guidance, develop and administer in-service training programs on a year-round basis. This would take some of the burden off of the teacher-education institutions and the State Agencies. Also, teacher certification regulations should be reviewed for barriers to the hiring of competent people especially in Trades and Industries.

The problem of facilities is exceedingly complex. It raises a number of issues which get to the nature of program articulation between the public schools and the community college institutions in vocational preparation, and alternatives in funding program expansion. The funding issue should be examined thoroughly in North Carolina Appalachia as a case study, and used as an input for the broader studies now in progress at the state level being carried on by the Governor's Commission to Study the Public Schools.

There are, however, two programs which can be carried on without additional facilities, with only minimal equipment additions, and with use of existing teachers for the most part. They are Introduction to Vocations and Distributive Education. Units in which lack of facilities now constitute a problem could expand for the time being in these two areas, rather than continuing to add to existing Agriculture and Home Economics enrollment capacity.

Community resistance to change can be handled through the public relations effort covered earlier. Special emphasis should be put on the changing nature of occupational requirements as a result of economic growth.

Curriculum in the Community College Institutions

In a separate technical appendix, occupational information on a district basis is presented with implications for curriculum design in the community college institutions. The analytical emphasis is that of program mix in relation to economic and occupational outlook, and does not involve the issue of excessive preparation in agricultural occupations. This has not been a problem in these institutions, primarily because post-high school education responsibility for both Agriculture and Home Economics is in the secondary schools.

The mix of courses between specifically local and non-local occupations is important however. Although these institutions have a responsibility to local industry and some degree of area specialization seems necessary, they must at the same time offer preparation over a broader range of occupational opportunities.

Course Content

Course content means the kind of preparation given in vocational programs, and whether it is satisfactory in terms of industry expectations. Analysis of industry comments on their experience with program graduates indicates that:

1. Local employment of program graduates has not occurred over a wide range of industries, particularly in the rural areas.
2. Reaction in those industries which have had experience with program graduates is mixed, ranging from very enthusiastic to rather disappointing.
3. The general comments are not so much about actual skill accumulation and job performance, but directed more toward better worker attitude -- the willingness to learn, the desire to update work skills, the approach to customer relations.
4. The specific comments relate directly to the employee needs of particular groups of industry.

Course content involves three things:

1. Communication with industry including:
    a. industry advice in course design
    b. an understanding of industry objectives with regard to occupational preparation

2. Updating materials to correspond with technological change implications for specific occupations

3. The extent of preparation in terms of specific occupational skill

Communication With Industry. The importance of this kind of interaction has not generally been recognized, particularly at the public school level. Industry survey returns indicate a wide gap even at the post-secondary level.

Yet industry can help in course design. Where joint education-industry participation in vocational education planning has been tried, the results invariably were helpful. This kind of participation should be attempted on a district-wide basis, possibly as an extension of the role of the advisory committee on education.

Continuing talks with industry can reveal the importance of work attitudes and possibly lead to suggestions about how education for attitude can be effective. Industry is equally as concerned about proper work attitudes as with skill accumulation.

An analysis of work attitudes considered important by a sample of regional firms is contained in Table 4. It indicates some comparability among manufacturing and non-manufacturing employers, but also some differences. Willingness to learn, cooperativeness and conscientiousness are most important in each case. From that point, special needs are reflected in the importance assigned to different attitudes. Manufacturing activity generally stresses willingness to work, loyalty, sociability, adaptability, and taking pride in work, in that order. Non-manufacturing activity stresses loyalty, interest in the job,[1/] taking pride in work, desire for success, and sociability, in that order.

[1/] Interest in the job was not mentioned by manufacturing firms.

The differences between the groups are subtle and could result basically from the small sample. Yet emphasis upon individual motivation to advance is much stronger in non-manufacturing jobs where a broader range of openings exist, and where initiative is likely to be rewarded more fully and more rapidly. This probably is because motivation is more closely related to the firm's success, as in sales.

Table 4. SUMMARY OF WORK ATTITUDES DESIRED BY NORTH CAROLINA APPALACHIA FIRMS

	Manufacturing		Non-Manufacturing		Total	
	Number	Percent	Number	Percent	Number	Percent
Willing to Learn	13	16.1%	31	20.4%	44	18.9%
Cooperativeness	13	16.1	19	12.5	32	13.7
Conscientiousness	12	14.8	15	9.9	27	11.6
Loyalty	7	8.6	18	11.8	25	10.7
Pride in Work	6	7.4	13	8.6	19	8.2
Sociability	7	8.6	10	6.5	17	7.3
Desire for Success	4	4.9	12	7.9	16	6.9
Interest in Job	0	0	15	9.9	15	6.4
Willing to Work	8	9.9	5	3.3	13	5.6
Honesty	2	2.5	7	4.6	9	3.9
Adaptability	6	7.4	2	1.3	8	3.4
Assume Responsibility	3	3.7	5	3.3	8	3.4
TOTAL	81	100.0%	152	100.0%	233	100.0%

Source: North Carolina Appalachian Region Survey;
Hammer, Greene, Siler Associates, 1967.

Specific objectives in occupational preparation depend largely upon the industry group. In chemicals, paper, and public utilities, the usual procedure is to hire high school graduates primarily at the entry level. On-the-job training is provided, and can extend over a period of three years in a formal education program as in the case of DuPont. Industries in this category emphasize the need for better basic education in the secondary schools, and tend to rely much less upon formal vocational preparation to meet their needs.

Another group is machinery and metals, which seeks skilled craftsmen to operate very expensive equipment and cannot afford either the time or the facilities to do their own basic training. Firms which utilize computers such as modernized textile and electronics operations are in the same class. These industries expect a definite skill level at entry and rely heavily upon occupational preparation, particularly at the post-secondary level.

A third group, characterized by sales and service activity, emphasizes a good basic education with specific education in customer relations attitudes and techniques. This could be accomplished either at the secondary or post-secondary level.

A fourth group is the building trades which seeks some skill level for entry or at least some knowledge of what is being done, as well as proper work attitudes. Ordinarily there is no preference regarding skill accumulation -- either secondary or post-secondary is adequate for entry level.

A fifth group is made up of the more traditional types of industry in the region and desires primarily a "fair day's work for a fair day's pay".

Updating Work Preparation. This, of course, is a critical aspect of course content and one to which most people subscribe. Yet there is a problem of implementing the updating with relatively fixed materials and equipment, texts, manuals, operating procedures, and instructors. Turnover in each obviously cannot be as rapid as the pace of technological change.

Industry should become much more involved in helping the programs remain up to date. There are great possibilities for in-service training of faculty conducted by industry, for aid in preparing supplementary materials, and use of industry personnel to demonstrate new techniques. Even experimental teaching sessions conducted at plants on new kinds of equipment would be of great value.

Updating is an information as well as skill implantation task; and the fact that the latter may be difficult to do within the educational institutions implies that the information task there is of even greater importance.

The Concept of Vocational Preparation. Educating for a cluster of occupations rather than for a specific task is a concept that is becoming widely accepted. Here too, however, the problem is implementation -- how it is to be done effectively, although local innovations are important, it is likely that the real breakthrough in cluster preparation will come out of research done at the state level involving industry.

The main problem in cluster training, one that is effecting day-to-day occupational training according to industry statements, is the lack of actual job experience. Industry people maintain that a good deal of on-the-job preparation must be given even to graduates from the two-year program of post-secondary institutions.

To some extent these comments may be based upon a lack of communication between educators and industry about just what should be the approach and objective of occupational preparation. Better communication about the role of the educational institutions undoubtedly would improve acceptance of program graduates.

But there is a more important issue here. Industry comments tend to reflect a desire to see more cooperative education programs, expecially at the post-secondary level. Firms feel that cluster-type education would make far more sense if the broad approach within the institutions were *at the same time* supplemented by actual work experience to provide skills in a specific area. Broadening the scope of occupational preparation at the post-secondary level to incorporate the cooperative approach not only would be of greater benefit to industry, it likely would cut down on the high drop-out rates at that level. This is mainly because of the income feature, but the close working relationship between the educational institution and the firm would enhance the value of occupational preparation to the student.

A related issue is the extent to which the cluster concept should be applied to occupations specifically geared to local industry. There is no reason why a student should not be prepared broadly with more generalized occupational skills than might be required for a specific local task. People change jobs more frequently today than in the past and the rate of technological obsolesence for occupations is far greater. Insuring that the capacity to adapt occupationally is implanted in all persons is a prime responsibility of the local educational institutions. Again, cooperative programs are likely to be the most successful approach.

Curriculum Flexibility

An additional point and one which is relevant for both levels of occupational preparation is curriculum flexibility -- the ability to adapt programs to unforeseen occupational demands. There are uncertainties involved in projecting occupational growth into the future partly because of the rapidity of growth in para-professional careers, and partly because of new industry. C & D field personnel are in an excellent position to provide information about potential occupational demand as a result of new industry growth.

Curriculum flexibility, as well as instruction and course design considerations already mentioned above, involves:

1. Facility Design -- which in addition to standard expansion considerations should include plans for branch operations, joint construction with other institutions, and mobile instructional units.
2. Equipment Requirements -- which should include improving the transference of equipment between institutions (particularly better second usage of MDTA equipment), "updating" equipment initially through updated information, and making greater use of industry operations as training components.

3. Program Planning -- which should be procedural guidelines for modification of program mix and course content, including information needs, lead time considerations in terms of equipment and instruction, and assignment of administrative responsibility for continued program planning.

Chapter IX. THE ROLE OF THE LOCAL ADVISORY COMMITTEE ON EDUCATION

Communication and coordination within education and between educators and the community is a local responsibility because education below the college level is essentially a local function. Communication and coordination therefore cannot be imposed from outside, but neither can it be successful from within unless a formal organizational structure exists to initiate and to direct local efforts. Implementation -- continuing responsibility for initiation and direction -- should be undertaken on a local development district basis by an advisory group representative of education, industry, local government, and the community at large.

A district-wide approach is more appropriate because it retains the advantages of local participation without sacrificing the community leverage that comes from a broadly based effort. It can then be carried on in conjunction with local growth response under the Appalachian Regional Development Act. Furthermore, the problems of communication and coordination exist primarily on a multi-county level and must be dealt with directly at that level.

The local advisory committee on education, suggested as an approach to community action through the power structure by the Advisory Committee on Education to the Appalachian Regional Commission, could be well-utilized for this purpose. We recommend that these committees be formed.

Citizen participation is important to all of education, but it is particularly important to emphasize in the area of occupational education since this area has for so long been neglected generally by the public. As Dr. H.H. Hamlin has pointed out:

> "Public education is conducted for the benefit of the public, not primarily for the benefit of the students and their parents, and certainly not for the benefit of the school employees. Only the public, or adequate representatives of the public, can define the public interests which the schools are intended to support. The public, or its representatives, cannot determine it without extensive study and far more information than it has today. Citizen Committees are a great venture in educating the American public about the schools and education. If the schools are to provide the education the public most vitally needs, one effective way of providing it is through educating the members of citizen committees."
> (Citizen Participation and Local Policy-Making in Public Education, College of Education -- University of Illinois, 1960)

There are three basic problem areas with respect to the use of citizen committees. These are:

1. A recognition of the need for citizen committees
2. Activation of the citizen committees as an integral part of policy-making
3. Spelling out specific assignments for citizen committees.

Dissemination of Information

The information task should be carried out in at least three areas: occupational information, improving the image of industry and of vocational education, and public relations for Project 16.

With regard to occupational information, it already has been suggested that the local advisory committees have a major role in preparing the studies. The concern here, however, is with assuring that the results are communicated to the educational institutions and to the community at large. Many of the study findings also will have relevance for the public relations effort on selling the value of vocational education.

The committee role on the image problem would involve determining what kind of local information input is important and helping to put it together in proper form. This could also involve a followup study on vocational education students in terms of occupational status and income, and packaging this as an aid to guidance, administrative, and teaching personnel.

Project 16 responsibility involves two things. The first is aiding counselors in assuring that local employers have a sufficient understanding of the program objectives and that they accept the potential value of having dropouts within this program. In this role, the committee will be far more effective than counselors acting alone. The second is helping to assure that sufficient information about the program gets to the parents of school-age youth through individual and group contact.

Guidance in Formulating Local Education Policy

It is suggested that the advisory committee perform a guidance role with respect to local education policy. This essentially means providing school boards and community college institutions with a broader perspective on public school education. Dr. Hamlin's comments, with regard primarily to committees at the school board level, have relevance here:

> "The principle, useful purpose a citizen committee can serve is to share with a board of education, a school staff, and others in the development of policies a board will enact. If a committee functions well as a partner in policy development, it has an opportunity to serve four other purposes: (1) If it has won the confidence of the professional staff of the school system, it may be asked by the staff to share in planning school programs, which the staff properly regards as its responsibility. (2) If it is to act responsibly in making policy recommendations to the board, it must make many studies of community needs, the effects of the school on the community, and the school. (3) It may help in providing effective communication between school and the community. (4) It has the obligation to support in the district policy recommendations in which the board and the committee have conferred".

Although the selection of advisory committee topics and the emphasis given to each is expected to vary among districts, the following are amoung those likely to be applicable in each district:

1. Work-Orientation of the Public Schools -- The extent to which occupational preparation should receive increased emphasis in the schools.
2. The Relevance of Curriculum for Occupational Preparation -- the extent to which shop and non-shop courses could be modified to offer more help in occupational preparation.
3. The Role of Guidance in Occupational Preparation -- the extent to which guidance services, both formal and informal (vocational teachers and industry), should be improved in vocational education.
4. The Importance of Non-Curriculum Services -- the extent to which non-curriculum services should be supported as an aid to the educational process.
5. The Relationship Between The Public Schools and the Community College Institutions -- the extent to which the two levels of education should work jointly at the local level in the area of occupational preparation.
6. Local Support for Public Education -- the extent to which local financial support for public education can and should be increased.

The above areas relate mainly to occupational preparation. It is not suggested that other considerations would have less importance before the advisory committees. These simply reflect what appear to be important concerns with respect to occupational preparation.

The local advisory committee might consider issuing formal statements on an annual basis directed toward the most pressing local issues at the moment. However, the essential role of this committee is seen more as one of long-run guidance; seeking to establish goals in public education on a district-wide basis and suggesting ways in which they might be implemented.

Coordination

The advisory committee is absolutely essential to provide the initial impetus for coordination and for giving continuing direction to local efforts. Relying upon voluntary association of the individuals and organizations concerned just will not work on a continuing basis. Further, because interaction among the groups has been limited up to now and because there are some sharp differences of opinion involved, the advisory committee will also have to provide at least the initial background for coordination efforts.

Coordination with respect to vocational education is particularly important in the following areas:

1. Joint Curriculum Planning -- which would involve educators and employers with questions of program relevance and course content and would involve the different levels of education with questions of program relationships, course sequence, occupational preparation with respect to a labor market, and overall role in vocational education.

2. Teacher and Guidance Training for the Public Schools -- which would involve public school and community college personnel and faculty from teacher-training institutions with questions of programs in vocational education teaching and counseling, instructional needs in the public schools and community college institutions, improved contact with industry in program preparation, in-service training in vocational education for updating purposes, and course offerings for teachers with little or no college background.

3. The Image of Industry and Vocational Education -- which would require a major role on the part of the advisory committee for content formulation, scheduling, and supporting of a continuing public relations effort at the district level.

4. New Approaches in Public Education -- which would involve the advisory committee in the dual role of providing an organizational structure within which ideas about new approaches in public education can be generated, and of offering an initial community sounding board for these ideas.

Improving Liaison with State Government

A primary objective of the advisory committee should be to act as a conduit of local ideas and requests to state agencies. This is not thought of, however, as a lobbying effort with respect to the individual administrative units but rather as one representing the district as a whole. The committee also should operate as a focal point of local opinion regarding state policy or legislation, achieving leverage on a district-wide basis, and acting in part as a grass-roots movement of improvement.

More specifically, the committee role could involve:

1. Assuring more effective provision and utilization of State services through an organized communications effort.
2. Carrying requests for broad changes in policy to State agencies.
3. Appearing before legislative committees on behalf of district interests.
4. Proposing adoption of new policies and legislation at the State level.

A Caveat

The one reason that problems are much more complex than perhaps they need to be is that education is fragmented into areas of knowledge, areas of administration, and levels of maturity of students. Each acts autonomously and rarely is any kind of articulation among the areas achieved. The fragmentation of structure encourages fragmentation of organization, responsibility, policy, and change. It makes coordination difficult and fastens, and inability on the part of each component to comprehend the total picture.

The most serious deficiency of local advisory committees is that they tend to reenforce the current fragmented structure in education by limiting concern to specific programs. This is contrary to the best interests of education and should be avoided. Therefore, the committees set up in each district should have the responsibility of looking at the whole of education at all maturity levels.

Chapter X. MULTI-UNIT COOPERATION IN THE PROVISION OF EDUCATIONAL SERVICES

In North Carolina, the traditional approach to the provision of education and educational services has been through independent financing by separate local administrative units. Even the establishment of community college institutions as post-secondary area schools under the 1963 Vocational Education Act has been based upon financing by individual counties. At one time, the local administrative unit or the county may have had sufficient resources within its own jurisdiction to meet the education needs of youth and adults. But this certainly is the case no longer.

The education needs of the public have far outdistanced the capacity of individual units to meet all these needs acting alone. Some can be met this way, but many require joint effort. We recommend that the local administrative units and the institutions of the Community College System explore all possibilities for cooperative ventures in the provision of educational services.

State policy is permissive in this regard. Section 1.4 (Cooperative Arrangements) of the State Plan for Vocational Education states in part:

> "The State Board may enter into special arrangements with metropolitan and other areas having special vocational needs which are not otherwise being sufficiently satisfied through the regular arrangement for vocational education. Whenever it becomes necessary to establish such special arrangements, the State Board shall submit to the Commissioner an appendix to the State Plan indicating the location and extent of each such area covered and the provisions of such arrangements including special administrative relationships and communication channels established between such agencies and the United States Office of Education." (Section 1.43 -- Special Areas)

Types of Services

We already have indicated that Project 16 would be ideally implemented under this type of arrangement.

The Education Advisory Committee for the Appalachian Regional Commission has taken a broad look at the needs and possibilities for multi-county cooperation. In their preliminary report they state:

> "The isolation and relatively small size of administrative units in Appalachia makes long-range planning and programs within each unit technically and logistically in-feasible. Therefore, the Education Advisory Committee staff is currently investigating the possibility of cooperative arrangements among school districts to form central administrative multi-district or county units.....Some of the programs that could be provided through this cooperative arrangement are: classes for mentally retarded or handicapped, guidance services, psychological and physical diagnosis and treatment, curriculum development, in-service training and administrative services."

The report further points out that these cooperative arrangements would have the advantages of consolidation for smaller administrative units on a cost-sharing basis, yet preserve the advantages that these units have in communication with the child. In effect, the services would be mobile, coming to the child as he needs them.

Organizing for Multi-Unit Cooperation

Some of the functions envisaged for the multi-unit arrangements parallel quite closely the concerns indicated for the local advisory committees on education. Because they would have a broad district perspective, we recommend that these committees undertake the responsibility to study the need for multi-unit provision of educational services and help organize such arrangements where they can be of value.

It is not expected that a multi-unit arrangement always will coincide exactly with local development district boundaries within which these committees function. It may prove best to have more than one arrangement within each district, and possibly some should cross district lines.

A logical extension of the cooperative arrangements would be an educational center as a focal point. This could be financed under Title III of the Elementary and Secondary Education Act. But if these centers are proposed, care should be taken that proper articulation is provided with community college institutions. The educational center could incorporate services for both secondary and post-secondary education, based at least initially on the flexible approach to cooperation as built into Project 16.

The best approach to the establishment of multi-unit arrangements would be on the basis of a demonstration project. We recommend that one local development district within the region be selected for a multi-unit demonstration project with special emphasis on implementation of Project 16. Provision should be made in the project, however, for regular participation of advisory committee members from other districts and for regular meetings with State staff will become involved as the program is extended into other areas.

Chapter XI. CONTINUING EFFORTS TO IMPROVE EDUCATION

The manpower education problem in North Carolina Appalachia, as in many other growing areas of this country, is that not enough of the potential labor force gets adequate occupational preparation. In elementary and secondary schools, too many students drop out, lacking even basic educational skills, and too many high school graduates are poorly prepared for work. In post-secondary schools, not enough enter to begin with, and not enough complete the programs. No matter how broad the educational opportunity concept of these institutions, the majority of those who could benefit are not likely to participate because some educational barriers do remain.

Probably the most important reason for persistence of these conditions is that public schools are predominately oriented to preparation for college and not for the world of work. The schools, and particularly the secondary schools, simply are not doing the job in occupational preparation that must be done.

Orienting the public schools to the world of work is a long and possibly difficult task because of the changes required in many parts of the educational system. One thing is certain -- instituting more shop courses at the secondary level is not alone going to do the job, and in some cases, may not even be the way to go. Not only must there be a broader range of general education offerings in occupational preparation but these and related offerings must begin much earlier in school -- perhaps as far back as kindergarten. And the total offerings must be an integral part of a comprehensive curriculum which includes the contributions of general education and the practical arts.

Curriculum modification with respect to traditional academic subjects such as English, Mathematics, History and Social Studies is badly needed. These subjects have to become more meaningful in terms of an occupational preparation curriculum and more understandable to the child. Also, teachers and administrators should be more adequately prepared for occupational education, and more and better informed guidance counselors are needed with special competence in advising for the world of work. These and other improvements can be initiated now if there is active local and state encouragement, but the real impact of change will lie a few years into the future.

We recommend three steps to be taken now to initiate improvements in local public education:

1. That the local advisory committees on education permanently undertake continuing examination of the system of public education in each local development district.
2. That a demonstration program be undertaken within one district in cooperation with the local advisory committee to initiate multi-unit cooperation in the provision of educational services, to initiate Project 16, and to implement other recommendations of this report.
3. That the institutions of higher education, particularly those with teacher-education responsibility, collaborate in developing both pre-service and in-service programs in occupational preparation for administrators, teachers, and guidance personnel of the region.

The Task of the Local Advisory Committee on Education

To assure improvement of public education within each district, the local advisory committee on education should conduct studies on a continuing basis for the local boards of education in the public schools and the boards of trustees of the Community College institutions. These studies should be geared toward orienting public education to the world of work and should cover:

1. The academic curriculum -- as a meaningful component of occupational education at all maturity levels which encourages further learning, and advancement in the world of work.

2. Occupational guidance -- pointing toward a sufficient staff of counselors well informed about industry and occupational opportunities and well prepared to advise on career alternatives and possibilities in educational preparation for work.

3. Non-curriculum services -- with the objective of providing each child and each school with necessary prerequisites and supplements to classroom learning so that the result will be the best possible opportunity to learn.

4. Approaches to comprehensive occupational education -- involving studies of alternative means of aiding high schools to become comprehensive in curriculum offerings through supplemental programs and services on an area-wide basis.

5. A program of comprehensive occupational education -- involving local determination of responsibilities and functions at each maturity level in public education within the overall framework established by the State Board of Education.

6. Meeting the educational needs of the poor -- involving new programs and provisions to meet the special education requirements of the economically, socially, and physically disadvantaged in both curriculum and non-curriculum services.

7. Local organization -- involving new ways of structuring the local response in public education that would promote comprehensive occupational education and program articulation amoung maturity levels.

8. Local funding -- involving an examination of local financial capabilities in relation to local education needs and suggesting

financing arrangements that would benefit
local provision of public education.

The primary objective is to develop a strong regional effort in occupational preparation programs by building upon program and personnel gains made over the past decade. The primary impediment to program expansion is money. But the really important question is how to spend this money most effectively since both the public schools and the community college institutions have claims on the limited financial resources of local and of state government.

Three facts stand out in considering a program of comprehensive occupational education for North Carolina Appalachia:

1. Developing an appropriate vocational program as part of a comprehensive high school in all local administrative units will be quite costly, especially in small units located in rural mountain areas. Transportation time and costs may well prohibit the establishment of comprehensive high schools in this area.

2. Most of the evidence on the quality of occupational preparation in the comprehensive high school, in the region and in the nation, indicates that the comprehensive high school must be supplemented by specialized occupational offerings if the program is to be effective.

3. Developing specialized area vocational schools at the secondary level ordinarily will constitute an unnecessary duplication of administration, programs, facilities, and equipment now operating at the post-secondary level in the community college system.

The most effective and economical way of developing a program of comprehensive occupational education in the region will have to involve arrangements for supplementary educational services on a multi-unit basis and developments for specialized programs through an expanded role of the

Community College System. How this should be worked out will depend entirely on local conditions, educational capabilities and financial resources. But the principles of cooperation among local units and cooperation between institutions at different levels of education will have to be followed if the region is to provide fully for the non-college bound students at a cost which can be borne reasonably by the public.

A Demonstration Project

We recommend that a demonstration project be undertaken immediately within the region to implement the recommendations of this study. The project should be confined to one local development district insofar as is possible so that maximum emphasis can be placed upon working out in practice the role of a local advisory committee on education.

The timing is right for this kind of effort. During our study, meetings were held within the region that generated considerable interest and enthusiasm for local action. At the State level, meetings were held that resulted in commitments to develop needed programs, particularly in the area of remedial education for dropouts; and the Governor has appointed a commission to study public education below college in North Carolina with special attention to providing guidelines for expanding programs in occupational education.

With research and program development moving very fast in the area of manpower education, spurred largely by shortages of skilled personnel, some assurance is necessary to see that local areas take advantage of this work in their own response to problems.

The primary objective of the demonstration project should be to develop multi-unit cooperation in providing educational services, especially in occupational preparation, to the district as a whole. The implementation of Project 16 would be a key feature of the demonstration effort.

The results of the demonstration project should have broad applicability throughout the region and the state as a whole. Therefore, every effort must be made to insure involvement of personnel from other local development districts and from the staff of the State Department of Public Instruction and the Department of Community Colleges. This is particularly important for extending programs initiated under the demonstration project to other areas with the State staff playing a key guiding role.

Institutions of Higher Education

Although this report has dealt with manpower below the college level, recognition should be given to the excellent capabilities of the institutions of higher education, both public and private, within the region. Though they have performed well in the past, they and especially the teacher-education institutions, will be called upon even more to meet the challenges of providing educational related services to a growing regional economy.

There are three areas of service which these institutions should offer to the region:

1. Community service capability
2. Building up occupational education below the college level
3. Extending graduate programs to meet the special needs of the region's business and industry.

The communities of the region will increasingly turn to these institutions for expert advice and in meeting the human and physical problems attending economic growth. The institutions of higher education should be prepared to offer services in this area. Although most institutions are committed to expansion programs which capture most of their available resources, consideration should be given now to designing a program for greater involvement in the regional community.

Probably the most important service will be provided by the teacher-education institutions in contributing to a greatly enlarged effort in occupational education. Much more should be offered in pre-service and in-service occupational education programs designed to contribute to understanding and competence on the part of teachers, administrators, and guidance personnel. We recommend that these institutions take the initiative now in joint program development efforts for occupational education, coordinating with the State departments and with local advisory committees on education. Joint program development also should take place with respect to new curriculum in the secondary and post-secondary schools.

As the regional economy matures, there will be a greater demand on the part of local firms for graduate programs, particularly in engineering and business administration. This is beginning to emerge now, but it will be sometime yet before a full graduate program is required. Although planning could begin now, it does not appear practical to commit resources of these institutions for program development at this time. Rather, the scattered local needs might best be handled temporarily via extension programs of the larger state universities. This would permit local institutions of higher education to concentrate their efforts in areas of greatest immediate need.